

PRESIDENT'S SECRETARIAT
(LIBRARY)

Accn. No. C5187

Class No. E30.61

The book should be returned on or before the date
last stamped below.

This image shows a full page of blank graph paper. The grid consists of horizontal and vertical lines forming squares. There are approximately 20 columns and 25 rows visible. The paper is slightly tilted clockwise. A small dark speck is present near the top center of the grid.

PROCEEDINGS
OF THE
FOURTH INTERNATIONAL CONFERENCE
OF
AGRICULTURAL ECONOMISTS



UNITED COLLEGE QUADRANGLE, ST. ANDREWS

PROCEEDINGS
OF THE
FOURTH INTERNATIONAL CONFERENCE
OF
AGRICULTURAL ECONOMISTS

HELD AT
ST ANDREWS
SCOTLAND
30 AUGUST TO 6 SEPTEMBER 1936

LONDON
OXFORD UNIVERSITY PRESS
HUMPHREY MILFORD
1937

OXFORD UNIVERSITY PRESS
AMEN HOUSE, E C. 4
LONDON LONDON GLASGOW NEW YORK
TORONTO MONTREAL CAPE TOWN BOMBAY
CALCUTTA MADRAS
HUMPHREY MILFORD
PUBLISHER TO THE UNIVERSITY

PRINTED IN GREAT BRITAIN

PREFACE

THIS volume of the *Proceedings of the Fourth International Conference of Agricultural Economists* records fully the papers and speeches delivered during the week of the Conference at St. Andrews. It is, however, left to the Preface to try to recapture some of the atmosphere in which the discussions took place and to acknowledge our indebtedness in many directions for the success of the meetings.

St. Andrews University, with its ancient buildings, its commodious halls of residence, its background of an historic city, and, no less important, the Royal and Ancient Golf Course, the sea-side air, and the surrounding farming country, made an ideal place for the Conference. The Conference is deeply indebted to the University authorities for the ample accommodation provided for residence and for meetings, and for their help and co-operation in every possible way. Acknowledgement is also due to the civic authorities for their ready assistance at all times.

The interest of H.M. Government in the meeting of the Conference in Great Britain was expressed by an official reception to members in the Younger Hall. This was attended by Mr. Walter Elliot, Minister of Agriculture, and Mrs. Elliot.

At a period in the world's history when governments and nations were busying themselves over preparations for war and rumours of wars it was refreshing to find with what objective sincerity and enthusiasm scientists, economists, and government experts of twenty-three countries could sit down together and discuss some of the root problems of humanity, international trade, land tenure, credit, co-operation, and the relations of agricultural production at home with foreign trade and with standards of nutrition, of living, and of rural life.

The wide support for the work of the Conference is shown in many ways. Over half the members of the first Conference at Dartington Hall in 1929 were present at St. Andrews. Nearly half of the 219 members present had attended at least one of the previous Conferences, an exceptional proportion when it is remembered that the previous Conferences had been held as far apart geographically as the U.S.A., Germany, and Great Britain. Another gratifying feature was that 127 of the members at the Conference had travelled from abroad. Although members from U.S.S.R. and Italy found it impossible to attend, contributions to the programme were made

for the first time by members from Argentina, Belgium, Czechoslovakia, Hungary, and Spain.

Once again the characteristic feature of the Conference was the informality with which all the proceedings were conducted. The afternoon excursions to neighbouring farms, the variety concert provided wholly by the members themselves, the ample time allowed for personal contacts and discussions, and the international encounters on the golf courses, all helped to create the most fruitful kind of atmosphere. In a climate such as this friendships spring up of a kind that helps to erase national boundaries and to promote the free exchange of ideas and information between specialists and administrators of one country and another.

The conference sessions were conducted with refreshing absence of formality and with as much spontaneous discussion as possible. Two languages, English and German, were used simultaneously by means of a relay apparatus to ear-phones. This greatly facilitated the discussion. The overcoming of the language difficulty would have been impossible, even with the relay apparatus, but for the work of our colleague Dr. Max Rolfes, who bore the whole burden of translating from German to English and English to German. The record of many of the speeches printed in this volume was obtained by means of sound records taken by microphone on the Telecord system.

In the week preceding the Conference a tour of the scenery and farming of Scotland was arranged for the delegates and conducted by Mr. J. F. Duncan and the Scottish agricultural economics advisers, Dr. A. D. Imper, Mr. J. A. Gilchrist, and Mr. D. Witney. After the Conference another party of members spent a week on a tour of England and Wales arranged and conducted by the advisory economists of the provinces through which the tour travelled, Mr. D. H. Dinsdale, Mr. John Orr, Professor A. W. Ashby, Dr. C. V. Dawe, Mr. R. R. Henderson, and Mr. Edgar Thomas.

The work of the Secretary, Mr. J. R. Currie, and his colleague Mr. J. P. Maxton, and their respective staffs, eased the path of the members at every step. The task of preparing and editing the *Proceedings* for publication was undertaken by Mr. Maxton and his assistants, Messrs. Grant and MacGregor.

In many countries something little short of a revolution in agriculture is in progress. Technical and scientific progress moves on rapidly. Government policy is everywhere concerned with the status of its agriculture. Swift steps have been taken which com-

pletely change the old outlook and procedures governing the production and sale of farm products, and national and international planning shifts the channels of trade between countries.

Behind all this movement there must be a fundamental striving towards economic security and a betterment of standards of living, in which agriculture cannot take an exclusive place, but in which it must play no small part. In fact the agricultural economist is faced with an immense task and an immense responsibility. The problems of to-day demand the most objective recording, scrutiny, and comparison, not only in the economic sphere but in the relation of their economic aspects to the other aspects of human welfare, social, psychological, humanistic, and aesthetic as well. From one country to another, problems which appear totally dissimilar may have many basic factors in common. Problems which appear local or national in their significance may have repercussions in the most unforeseen parts in the world's economy.

It is for these reasons and for the promotion of international understanding that periodic meetings of agricultural economists from all parts of the world and from all forms of activity, research, teaching, administration, and industry, have an importance not easily estimated.

The next Conference will be held at the end of August 1938 at MacDonald College, Quebec, Canada.

L. K. ELMHIRST
President.

CONTENTS

Preface	v
Introduction	xiii
Addresses of Welcome:	
<i>President</i>	L. K. ELMHIRST 1
<i>Vice-Presidents</i>	{ PROFESSOR G. F. WARREN 4
<i>Representing British Council</i>	PROFESSOR M. SERING 5
<i>University of St. Andrews</i>	PROFESSOR A. W. ASHBY 6
<i>Department of Agriculture for Scotland</i>	REV. DR. H. MILLAR 8
<i>Ministry of Agriculture for Northern Ireland</i>	P. R. LAIRD 9
<i>Agricultural Economics Society</i>	D. A. E. HARKNESS 11
<i>Scottish Agricultural Economists</i>	EDGAR THOMAS 11
	W. H. SENIOR 13
Replies to Addresses:	
<i>United States of America</i>	DR. C. E. LADD 13
<i>Germany</i>	PROFESSOR H. ZÖRNER 15
<i>Scandinavia</i>	PROFESSOR O. H. LARSEN 16
<i>Canada</i>	PROFESSOR J. E. LATTIMER 16
Opening Address by the President	L. K. ELMHIRST 18
THE RELATIONS OF AGRICULTURE TO INDUSTRY AND THE COMMUNITY	
Opening Paper	W. R. SCOTT 24
Discussion	R. R. ENFIELD 32
	A. B. LEWIS 38
	D. A. E. HARKNESS 39
	W. R. SCOTT 43
	C. E. LADD 44
	BARON BELA MALCOMÉS 48
	J. KNESPL 58
	J. F. DUNCAN 65
	T. W. SCHULTZ 68
	C. VON DIETZE 71
THE RELATIONS OF LAND TENURE TO THE ECONOMIC AND SOCIAL DEVELOPMENT OF AGRICULTURE	
First Opening Paper	M. SERING 73
Second Opening Paper	A. W. ASHBY 87
Discussion	J. E. LATTIMER 103
	L. DRESCHER 111
	B. H. HIBBARD 114
	C. IHRIG 119
	G. DALLAS 122
Minute of Group Meeting to Discuss Research on Land Tenure	125
THE PROVISION OF AGRICULTURAL CREDIT	
Farm Credit in the United States	F. F. HILL 127

A Sound Basis for Farm Mortgage Credit	E. H. THOMSON	144
Experience of Debt Adjustment in Czechoslovakia	E. PATKA	159
Some Problems of the Production Credit System	A. L. DEERING	164
Discussion	W. SEEDORF	172
	C. R. ARNOLD	173
COMMERCIAL POLICY AND THE OUTLOOK FOR INTERNATIONAL TRADE IN AGRICULTURAL PRODUCTS		
Opening Address	A. CAIRNS	176
Discussion	H. C. TAYLOR	183
	L. A. WHEELER	185
	I. DE ARLANDIS	187
	E. M. H. LLOYD	187
	R. GARCIA ARIAS	189
	F. E. GELDENHUYS	190
	J. E. LATTIMER	190
	R. S. BANS	192
	A. CAIRNS	197
FARM ORGANIZATION WITH SPECIAL REFERENCE TO THE NEEDS OF TECHNICAL, INDUSTRIAL, AND ECONOMIC DEVELOPMENT OF AGRICULTURE		
First Opening Paper	A. BRIDGES	204
Second Opening Paper	H. ZÖRNER	216
Third Opening Paper	H. R. TOLLEY	227
Discussion	A. W. ASHBY	239
	G. F. WARREN	243
	O. H. LARSEN	245
	T. W. SCHULTZ	248
	F. VON BÜLOW	252
	E. LANG	253
	J. COKE	259
	F. BUČEK	270
	A. B. LEWIS	279
	H. ZÖRNER	281
	J. F. DUNCAN	285
	W. SEEDORF	288
	H. C. TAYLOR	290
	A. HAY	291
	S. SCHMIDT	292
	J. P. MAXTON	292
	G. F. WARREN	294
	I. DE ARLANDIS	294
	O. H. LARSEN	295
PROBLEMS OF MILK MARKETING REGULATION		
Opening Paper	W. H. BRONSON	297

Contents

xi

Discussion	J. LL. DAVIES	307
	C. G. MCBRIDE	314
	R. COHEN	316
	J. LL. DAVIES	318
	W. H. BRONSON	320
THE AGRICULTURAL SITUATION IN BELGIUM	G. BAPTIST	322
COMPULSORY SYNDICATES FOR REGULATING AGRICULTURAL PRICES	C. VON DIETZE	328
HOW THE NATURAL PRODUCTS MARKETING ACT OPERATES IN BRITISH COLUMBIA	F. M. CLEMENT	342
GOVERNMENT REGULATION OF PUBLIC UTILITIES IN THE UNITED STATES	M. C. BURRITT	356
RELATION OF CHANGES IN MEAT PRODUCTION AND CONSUMPTION TO CHANGES IN FARM INCOME FROM LIVE STOCK IN THE UNITED STATES	P. RICHARDS	367
THE WORK OF THE AGRICULTURAL SERVICE OF THE INTERNATIONAL LABOUR OFFICE	F. VON BÜLOW	374
PART-TIME HOLDINGS FOR URBAN WORKERS		
First Opening Paper	H. KRAUSE	381
Second Opening Paper	K. HOOD	391
Discussion	F. VON BÜLOW	398
	I. DE ARLANDIS	400
	R. HENDERSON	401
	L. K. ELMHIRST	403
	G. H. N. PETTIT	403
	W. SEEDORF	404
	B. VON ZASTROW	405
	G. BAPTIST	406
	G. P. WIBBERLEY	407
	I. DE ARLANDIS	407
	K. HOOD	408
PROBLEMS OF CONSUMPTION OF AGRICULTURAL PRODUCTS		
First Opening Paper	E. P. CATHCART	412
Second Opening Paper	R. B. FORRESTER	422
Discussion	F. L. MACDOUGAL	429
	E. M. H. LLOYD	434
	F. VON BÜLOW	436
	H. K. STIEBELING	438
	GRAF F. VON FINKENSTEIN	464
	M. K. BENNETT	465
	S. SCHMIDT	471
THE EVOLUTION OF THE AMERICAN FAMILY FARM	A. BOSS	484
Discussion	J. P. MAXTON	491
	J. F. DUNCAN	493
	C. IHRIG	495
	A. BOSS	496

CHANGES IN CHINESE CURRENCY AND THEIR EFFECT UPON COM- MODITY PRICES	A. B. LEWIS	499
LIST OF PERSONS ATTENDING CONFERENCE AT ST. ANDREWS, SCOTLAND		507
THE INTERNATIONAL CONFERENCE OF AGRICULTURAL ECONOMISTS, ITS HISTORY, CONSTITUTION, AND LIST OF MEMBERS		509
INDEX		525

INTRODUCTION

THE purpose of this introduction is to act as a supplementary guide to the contents of this, the fourth volume of the *Proceedings of the International Conference of Agricultural Economists*.¹

At the preceding Conference held in Germany in 1934, considerable time was devoted to outlining the national and international policies which had been adopted to deal with the agricultural crisis. In arranging the programme for the Fourth Conference at St. Andrews, the organizers laid emphasis on certain fundamental problems underlying all agricultural policy, the relation of agriculture to the rest of the community, land tenure, the industrial organization of farming, the provision of credit in agriculture, and the problems of consumption of agricultural produce. These five subjects were made the basis of discussion for the larger part of the time available in the course of the week, and they occupy the large part of this volume. The development of the idea upon which this part of the programme was devised will be found in the Opening Address by the President (pp. 18-23). Although these subjects in themselves are fundamental to practically every aspect of agricultural economics and agricultural policy, it was inexpedient to devote the whole time of the Conference to so broad a treatment. Other sessions were therefore allocated to papers and discussion on more specialized subjects.

The arrangement of the printed proceedings is strictly in the order in which the papers and speeches were delivered. This arrangement precludes the possibility of bringing together into separate sections all the papers and discussion dealing with specific subjects. The plan of the programme itself, however, provided some measure of arrangement by subjects, and, while necessarily different aspects of certain subjects are to be found scattered throughout the volume, an understanding of the plan of the programme will indicate the general plan of the book.

¹ Volumes i and ii of the *Proceedings*, reporting the First and Second Conferences, held in 1929 and 1930, were published by the George Banta Publishing Company, Menasha, Wis., U.S.A., 1930. Volume iii, reporting the Third Conference, was published by the Oxford University Press, 1935.

Copies of all three volumes are obtainable from J. R. Currie, Research Dept. (Economics), Dartington Hall, Totnes, Devon, England; and in the United States of America and Canada from Dr. G. F. Warren, Department of Agricultural Economics, Cornell University, Ithaca, N.Y. Copies of volume iii are obtainable also from the publishers,

The five main sections of the programme to which most of the time of the Conference was devoted were: The Relations of Agriculture to Industry and the Community (pp. 24-72); The Relations of Land Tenure to the Economic and Social Development of Agriculture (pp. 73-126); The Provision of Agricultural Credit (pp. 127-175); Farm Organization, with special reference to the Needs of the Technical, Industrial, and Economic Development of Agriculture (pp. 204-296); Problems of Consumption of Agricultural Products (pp. 412-483). The page references in brackets are to the sections of this volume which include the opening papers and the discussion of these main subjects. It is necessary, however, to point out that the discussion was of two kinds. Some speeches dealt directly with the problems raised in the opening papers, while others dealt with special aspects of the main subject. Where the latter occur the title of the special aspect is indicated in a footnote.

The other sections of the programme were of two kinds: the one where the sessions of the Conference were devoted to the reading of papers on special subjects, on which there was little or no discussion, and the other where group sessions were held mainly for discussion. Papers in the first of these will be found on pp. 322-380 and pp. 484-506, and the titles and authors are given on the contents page. The group discussions on International Trade Policy, Milk Marketing Regulation, and Part-time Holdings for Urban Workers will be found on pp. 176-203, 297-321, 381-411 respectively.

A photograph of the members attending the Conference, with key, is placed between pp. 506 and 507.

Particulars of the International Conference of Agricultural Economists, its constitution, and list of members and correspondents in the various countries will be found on pp. 509-23.

ADDRESSES OF WELCOME AND REPLIES

L. K. ELMHIRST, *President, Dartington Hall, England.*

IN opening our fourth Conference I would like to quote from our Constitution which was worked out in 1930 at Cornell University at the second Conference.

'The object of the Conference is that of fostering the development of the sciences of agricultural economics, and of furthering the application of the results of economic investigations of agricultural processes and agricultural organization in the improvement of economic and social conditions relating to agriculture and rural life.'

In working out the programme for this Conference our preparations started almost as soon as our Conference ended two years ago at Bad Eilsen, Germany. Early in 1935 our British group met in Cambridge to make the preliminary arrangements. After that I was fortunate enough to be able to visit the group in the United States of America, and had a long talk with one of the members of our first Conference, Mr. Secretary Wallace, in Washington. In November of 1935 I visited the German group in Berlin, and in the spring of this year I was able to discuss the programme again with the American group in Cornell. To our meeting in Cornell, Mr. Secretary Wallace himself came in the interests of the Conference, and there promised his whole-hearted support. He has sent us a number of representatives from Washington—who are here to-day. Shortly after the meeting in Cornell I received an invitation, two days before sailing from America, to go to Ottawa, and was fortunate enough to meet quite a large group of officials and agricultural specialists in Ottawa, and to have a very good discussion with them both about the history of the Conference and our programme for this meeting.

During these two years we have established very warm relationships with a number of countries not hitherto represented. It is very unfortunate that, owing to the present situation in Europe and other parts of the world, we have been unable this time to draw representatives from certain countries from which our members had expected to come but now find themselves unable to do so. These countries include France, Turkey, Greece, Italy, and Russia. On the other hand, besides all our old friends from other countries, we have four new countries represented at this Conference, Hungary, Belgium, Spain, and Palestine. We have made a great effort to get

into touch with agricultural specialists in India, and I had a very warm letter from the Viceroy, saying how he has the utmost sympathy with the objects of our Conference and the good work that it is endeavouring to do in this most important field. Owing to the difficulties of finance and distance we have fewer members from that part of the world here to-day than we hoped.

These two years have been difficult years, full of wars and rumours of war, and one thing that has been a great compensation to us all during these difficult times has been the great loyalty of our old members. Of the original 40 members who attended our first Conference at Dartington Hall in Devonshire in 1929, half are here to-day. During these two years also, the Conference has been engaged in original work which should be of direct value to all our members. One, which we hope to have available in published form before the end of the week, is *Regional Types of British Agriculture*, which has been prepared by the co-operative efforts of fifteen agricultural economists in this country, giving a picture that has never yet been given of the various agricultural regions of Great Britain. The other work, carried on in the name of the Conference, is the co-operative study of land tenure in various countries, work which has been initiated and fostered by Dr. Sering. I should like to say here how deeply we appreciate the concentrated effort that Dr. Sering has given to the work of the Conference over these last seven years. These works to which I have referred are quite apart from the preparations for the Conference itself, and I hope both at this meeting and later the products of this work will be available to all members.

For those of you who are attending our Conference for the first time, perhaps it would be well to give a little past history. Largely owing to a visit from Dr. Ladd, now Dean of the Agricultural College at Cornell University, Ithaca, New York, to this country in 1928, a number of our agricultural economists in this country met to discuss the possibility of some co-ordination and co-operation between England and America in their research work into agricultural conditions. As a result of that meeting and with the blessing of Mr. Orwin of Oxford, who had hoped to be here at our Conference to-day, and with the warm support and sympathy of Dr. Warren, the first Conference was held down in Devonshire in 1929. You will wonder, perhaps, why we chose that out-of-the-world spot. It was because, even in those early days, we knew how important it was to get to know one another, and to form those personal attachments that would make for co-operative international work in

the future. At Dartington Hall there was no escape; we were so far out in the country that no one could get away from the Conference. We tried, also, not to flood our programme with lectures, but spent quite a little of our time getting to know one another, teaching Americans cricket and Englishmen baseball. We also arranged there a tour after the Conference for those who had never come into direct touch with English farmers and the English countryside; and we also arranged visits to head-quarters of agricultural research.

Those three main traditions set at that conference in 1929 were followed at Cornell and at Bad Eilsen; the leaving of ample time for those personal contacts which are really the body and the important element in our Conference; the cutting down of the amount of lecture material and the allowing of ample time for discussion of the ideas put forward; and lastly those tours before the Conference and after the Conference, when our members get a chance of getting into direct touch with the farms, the farming, and the agricultural conditions of the country which they are visiting. One further principle I think we have established in the last three conferences, and that is that, in spite of political fronts of all kinds and of 'party' dealings with the agricultural situation in one country and another, we have achieved a certain standard of scientific outlook, of detachment, and of discussion relieved from those feelings which so easily get into meetings which are engaged in dealing with problems over which political groups in one country or another are struggling. We hope to see all those traditions carried on during our meeting this time.

I should like to convey on your behalf our thanks to Sir James Irvine, the Principal of St. Andrews University, and to the Provost of the city of St. Andrews. Those of you who have had even a few hours in St. Andrews will realize how, in this very small town, you find locked up the history of civilization over some 1,400 years. It was between 563 and 590 that the missionary monk Columba arrived here from Iona to try and spread Celtic Christianity among the Scots. That work was handed on to others and has been going on ever since, as the great cathedral and the other ancient churches of this city will illustrate to you. In very few cities in the British Isles will you find compacted into such a small area so much history from the past. Celt, Scot, Saxon, Dane, Norman, French—all these have made their contributions to the history and the civilization which this famous town represents, and it is well for us as agricultural economists to remember that a town like this, with its wealth of building, could only have been brought into being by a fairly comfortable system of farming carried on here for well over a thousand years. For those of

you who are interested in architecture as symbolic of civilization, there is a unique tower in the town itself the like of which I do not know in the rest of the British Isles. St. Rule's Tower looks as though it had been planted here straight from Italy in the tenth century.

One new feature of our Conference is a welcome from His Majesty's Government which will be offered to you to-morrow evening by His Majesty's Minister for Agriculture, Mr. Walter Elliot. We have all our pet suspicions of politicians, but you will realize that in Mr. Elliot we have more than a politician, when I tell you that, as a younger man, he was engaged as a research worker himself at the Rowett Institute near Aberdeen, which many of you visited on the tour before the Conference. He has always shown a keen interest in research and has emphasized the need of research work as an approach to wise legislation in the interests of agriculture.

PROFESSOR G. F. WARREN, *First Vice-President, Cornell University, New York, U.S.A.*

You, Mr. President, have already expressed our appreciation of the opportunity of holding the Conference in the quiet atmosphere of this University, and I am sure that our proceedings will be in keeping with the traditions of scholarship and open-minded vigorous thinking for which this University stands.

During the past twenty years the world has made great progress in industrial mass production. All nations have also tried mass thinking. We have found that the factory method of mass production does not work well when we are searching for the truth. The world of mass production needs a period of individual research and thinking. Progress in the search for truth moves irresistibly forward. Nothing can stop it, but it advances on a very uneven front. Progress takes place at a very rapid rate first at one point then at another. The last thirty to fifty years have seen a revolution in medical science, primarily due to the knowledge about bacteria. Chemistry has made great strides. The old alchemy is gone. Genetics has replaced superstition with science. During most of this period economic science was nearly stationary, but I believe we are now in the beginning of a period that will show an equal advance in economic science. Economic alchemy must be laid aside. In every advance in chemistry, engineering and the like, there is a threat to society, if not accompanied by an equal advance in the science of economics. It is however not enough that the doctors alone should know about bacteria. Public health requires universal dissemination of that knowledge.

Similarly, it is not enough to discuss the laws of economics. That knowledge must be universally disseminated. The world of action cannot wait for science. It did not wait for medical science. It bled men for typhoid fever because it did not know enough to filter the water. It put them in closed rooms for tuberculosis instead of abolishing the common drinking cup and other sources of infection. So the economic world is to-day bleeding the patient because it does not know what it is doing. I need not enumerate to you the thousands of foolish things that are being done either because the laws of economics are not discovered or because the knowledge is not available to those who must act. It is the purpose of this Conference to exchange ideas and inspire each other to more zealous search for truth and obtain a wider dissemination of the little that is known.

I commend you to the store of excellent papers and innumerable private discussions which are even more important, not neglecting recreations. Now at Dartington we had our private discussions, with Dr. Zörner and the Americans trying to learn English and experimenting with it on the English. These discussions were so numerous and so continuous that Mr. Elmhirst found great difficulty in breaking them up, so that we would get on with the single discussion of the Conference. He reached round for something that would help in the proceeding and found what I have here, namely, the cow-bell.

This is a cow-bell from the Plains of Salisbury. That is a very powerful, economic, statistical statement. The President got it in a second-hand place near Salisbury; more likely then to have come from the Plains of Salisbury than elsewhere. Cows are more numerous in the herd, therefore it is in all probability a *cow*-bell. I think that we can say therefore that, other things being equal, this is a cow-bell from the Plains of Salisbury. There are other peculiarities about this. It has crossed the Atlantic Ocean four times and never been seasick. In English the clapper of this bell is called a tongue, the same word as for a man's tongue; also the same for a woman's tongue. This tongue has been silent for two years.

It is the only tongue which with our varied languages we can all understand. I present it again to the President to carry on its function for the fourth time of regulating our Conference proceedings.

PROFESSOR M. SERING, *Second Vice-President, University of Berlin, Germany.*

In this, our fourth Conference, it is a great pleasure to see so many friends who have taken part in our earlier gatherings. Every time we meet we get closer acquainted with each other. We recognize

well-known faces and we are better informed on the scientific work which is performed by the members in all parts of the civilized world. We gratefully acknowledge their valuable contributions to the growing success of the Conference. It is not therefore only the pleasure we feel in meeting again under such happy and promising circumstances, which is the feature of our Conference. Far more, I am convinced that our Conference has embarked upon and is going to fulfil a task of far-reaching importance and of great responsibility.

We are a conference of independent men and institutes whose research work is guided by the spirit of scholarship. Our Conference is the only *international* body of students in the economic and social field, and it was an important step when we resolved at our last meeting held at Bad Eilsen to suggest to all national groups the preparation of surveys of the social economic structure of the rural populations. I am glad to say that this co-operative research work is progressing in a satisfactory manner. Up to date, five reports have been completed, namely those on Switzerland, Hungary, Bulgaria, Yugoslavia, and, with a slight modification of the subject, Great Britain. The studies for some other countries are nearing completion, for instance, for Austria, Italy, Norway, Denmark, and Germany. The work has also been organized in the United States, Canada, Czechoslovakia, and other countries. You will see from the completed reports how well they are suited to give us better knowledge of the characteristic features of the various nations. This more profound knowledge of the social life of our fellow nations will promote mutual understanding, and will thereby help to solve the great economic and social problems of our time by international co-operation.

I am sure that it is only by working at common scientific tasks that a society like ours can grow stronger, and that it is only on such a basis that our discussions can lead to really fruitful results. Moreover, I dare say we may even hope that honest and sincere co-operation in our field can help to overcome the present tense political situation.

Reference to these high duties of which we are made conscious by thinking of the possibilities and the tasks of our research work in economic and social problems seems to me the best welcome I could give to the Conference, to its members, and to the country which so kindly welcomes us.

PROFESSOR A. W. ASHBY, *University of Wales, Aberystwyth, Wales.*

It is a very pleasant duty that my colleagues on the council representing Great Britain and the whole British Group give me this evening. I do not know why the duty should fall to me, except

that possibly I represent one of the characteristics of the British Group, being an Englishman, sometimes obviously an Englishman, representing a Welsh University, speaking in Scotland. The only thing that I regret about this Conference is that the first Conference should have been held in the soft and sunny south, what the Scots sometimes say is the 'soppy south', and should then have moved to the cold hard north, without staying in the sane middle of the country. However, we must do our best where we are and we need not start out with the belief that the Scot is hard, or that he is logical, because we shall soon find out, as I have no doubt those of you who have been on the tour have already found out, that the Scot is intensely sentimental, and a little sentiment is not a bad thing in an International Conference. Indeed I am inclined to attach a very great deal of importance to the sentiment which those of you who have been members of this Conference since the start are beginning to attach to the organization, as well as to its purpose and its ideals. There never was a time when it was more desirable that those of us who could begin to think and, much more important, feel internationally should let that feeling run free, than at this present time. When we met at Dartington in 1929 many of us, perhaps most of us, were inclined to think that we could serve the objects of the Conference—the improvement of the economic and social conditions in rural areas—merely by studying the farm problem or the rural problem. If that phase is left in any of us at the present moment I should be very much surprised. What has come home to all of us in the seven years since that Conference is that what we have sometimes thought of as the agricultural and rural problem is only a part of a great human problem of economic, social, and political relationships which runs not only through all national societies but across the boundaries of practically all our national societies. If we can begin in this Conference to see where our lives and activities are linked, and where we can build on those links, for common mutual benefit, then if only as a matter of thought in the search for truth and principle this Conference will have served its purpose. And if for the moment, or some moments, the Conference may appear to get away from the little farm problem into that international field of economic relationships between nations as such, it will not really have departed from its purpose. We shall only be seeing the major problem into which the minor problem of the farm is always fitting itself. The British Group is glad to entertain the Conference in Scotland, and looking at the programme and the general arrangements made I feel sure we may look forward to a satisfactory meeting.

THE VERY REV. DR. HARRY MILLAR, *Principal of St. Mary's College, St. Andrews.*

My task this evening is very light and very heavy. Very light because it is to bear to you a welcome from this ancient University which is most heartfelt and sincere; very heavy because I try inadequately to represent Sir James Irvine, my friend and the Principal of this University. I shall not attempt to speak of your far distant parts of the realm, nor am I very well able to discuss land questions, though political economy was for thirty-two years a subject which I tried to teach in part in Edinburgh University. I am more concerned to speak of this wonderful place to which you have come. It has a glamour and a charm about it which I am sure you have already felt. Its ancient buildings and its thoughts of the past fill one's mind with wonderful dreams of what did happen. But there is more in it than that. It is a forward-moving University under the leadership of Sir James Irvine. It occupies a place second to none in research to-day, especially in the medical, chemical, and other scientific departments. I think you will feel, when you are housed in our two halls, St. Salvator's Hall and University Hall, that the very atmosphere of, shall I say, research is there. I do not say that is altogether foreign to the atmosphere of golf. As a certain American lady said to a friend of mine on the links here, 'These are very fine links for such a very small place.' It takes a little time to see how much this place has grown with its adjunct of the links, and its centrality of research and scholarship.

There are lots of things which I might speak of, but the time at my disposal is short. One story illustrating the many-sidedness of research may interest you. Lately, when the old College Chapel was rebuilt, our Principal went down into the tomb of Bishop Kennedy which rests beneath the Chapel, and there in exhuming the body the oak coffin split with such a report that he thought he had been hit by a bomb. On investigation of the bones of that ancient Bishop, it was found that he had been a sufferer from rheumatoid arthritis and had had a broken collar-bone late in life. At about the same time, a research student of this University, searching the records of the Bishop's life in the Vatican, discovered that he was a soldier of no mean order and a fencer of very remarkable power, that he had been in the pay of the Scottish kings to get in touch with the dukes of Burgundy with a view to out-mastering the power of England. One niche fitted into the other, and the research student and the anatomist assisted one other in their pursuit of truth. I think that becomes a parable.

There are enormous and difficult problems facing the world to-day; there are great and difficult elements in them; and sometimes it is difficult, too, to see the border line. I think that you should not be at all holding back from that border land; that you should in your research here follow up the spirit of this ancient, the most ancient of the Scottish Universities, and seek truth and pursue it wherever it leads.

As you go round this ancient University not only in the United College of St. Salvator and St. Leonard, but also in the old and quiet quadrangle of St. Mary's College founded in 1537, you will find evidences of that love of learning and passion for truth which is the mark of all true education, and which you are doing so much with your manifold representation of different races, of different nations, of different ways of dealing with the one question of the land in its economic aspects. With all my heart, representing the University and with very great sincerity my Principal, we welcome you to this ancient University and hope that you will have happiness in the time of recreation as well as of work and of investigation, and that the weather will shine upon you and you will not call it the 'soppy' north.

P. R. LAIRD, *Secretary of the Department of Agriculture for Scotland.*

Representing the Department of Agriculture for Scotland and on behalf of the Secretary of State for Scotland who has not been able to extend a welcome in person to this Conference, I have very great pleasure in saying in a few words how pleased we are that Scotland has this opportunity of entertaining the many distinguished economists who are attending this Conference. It has been fashionable in the past—I don't think perhaps it is so to-day—rather to decry the work of economists and to say that the result of their labours is too often nothing more than a jumble of contradictions and inconsistencies affording no sure basis for a firm and definite policy. You would almost think from some of the criticisms on this line that economics ought to be defined as the science of drawing different conclusions from the same premisses. Whatever vestige of truth there might be in the thought behind such a statement we would all agree that it was very loosely expressed, because of course the economist, like any other scientist, is working on ascertained facts and not on premisses, and, like any other scientist too, he is on the basis of his facts and his statistics framing certain hypotheses which may or may not prove to be right. Unlike most other scientists, however, the economist is always labouring under two rather special

difficulties. In the first place his hypotheses can very seldom be either proved or disproved by experiment, because there are so many factors which he has not the means to control and, secondly, his statistics themselves are always proving a little bit too much for him. They are always overtaking him; they are always tending to be out of date; they are never sufficiently comprehensive at any one time for his purpose. I think that it is for this reason perhaps that general theory, as distinct from particular hypotheses, tends to play a very large part in this particular science, this science relating to the production and distribution of material wealth—which I had better quote to show that I know a more orthodox definition than the one I mentioned previously. But it is, to my mind, the greatest tribute to the value of the science of economics that, notwithstanding the difficulties under which it labours and the prudent reserve with which it offers its interpretations, no statesman and no administrator nowadays can afford to dispense with the services of economic advisers, and I venture to think that none of them will lightly disregard their opinions.

Agricultural economics is a branch of the science to which growing importance is rightly attached. It is not only because I happen to be associated with a department which is daily dealing with agricultural problems that I say this, or even because the production and distribution of agricultural products is the most fundamental form of production and distribution, but most of all because this science is taking such an ever-increasing part in the interplay of national and world politics. Although the United Kingdom must be classed as an industrial country, agriculture (in so far as one can call agriculture a single industry) still is in Scotland an industry which occupies a premier position, and I hope and believe that those who have been touring the country during the past week will have found much to interest and stimulate them. If, as no doubt will happen, the more formal deliberations of the Conference find you drawing different conclusions during this week, at least it will be on the same premisses, and I hope in a congenial atmosphere. Opportunities for an exchange of views on a subject so big, so rapidly changing, so obscure in many ways, are not to be lightly lost, and I feel sure that this Conference will prove to be as valuable and fruitful as those which have preceded it.

I should like to say that we are particularly glad to welcome so representative and distinguished a gathering of fellow explorers from other countries. We wish them a most enjoyable week of conference on Scottish soil.

D. A. E. HARKNESS, *Ministry of Agriculture for Northern Ireland.*

In the absence of Sir Basil Brooke, Minister of Agriculture for Northern Ireland, who hopes to attend the Conference later this week, I have very much pleasure indeed in extending a welcome to all members of the Conference, and particularly those members who come from overseas, on behalf of the Ministry of Agriculture for Northern Ireland. Those of you who come from overseas have probably observed that you are in the United Kingdom of Great Britain and Northern Ireland, and you may have wondered what this appendage to Great Britain in the United Kingdom actually is. It is a portion of Ireland which constitutes an integral part of the United Kingdom but which also represents a British experiment in devolution. With a separate Parliament of its own it has been possible for Northern Ireland to carry out certain experiments in Government, on a relatively small scale it is true, but distinct from those which have been carried out in Great Britain, although carried out within the same customs union. In a country of small farms, predominantly agricultural in character, agricultural questions have played a very important part indeed, especially as in this area we are largely dependent upon exports of our farm produce to the British market. It is also an area in which the greatest attention has had to be paid to an effort to secure a reasonable livelihood for a body of people who are living on farms which are small and attempting to make a livelihood from a soil which in many cases is not the most congenial.

Northern Ireland is not included in any of the tours which have been arranged either before or after the Conference, and on that account Northern Ireland has had to come to meet you at St. Andrews. I think there is a numerous delegation from Northern Ireland present at this Conference, and though we regret that you will not be able as an organized body to visit Northern Ireland to see our small farms and to play upon our golf courses, yet members from Northern Ireland are here and I hope that they will have the opportunity of discussing with you personally some of our problems. And I may also add that there are several bags of golf clubs among the representatives from Northern Ireland for use against those who may think that discussion is most profitably carried on on the golf links.

EDGAR THOMAS, *Secretary, Agricultural Economics Society.*

On behalf of the Agricultural Economics Society of Great Britain it is my privilege and very great pleasure to welcome our overseas

visitors to this country. I am very sorry that it has not been possible for Mr. Conacher, the President of our Society, to be present here this evening to voice this welcome to you. His absence, however, gives me the opportunity of undertaking one of the most pleasant tasks that could possibly come to the lot of any official or member of our Society.

I have something in common with Professor Ashby, too, this evening, for I can't help feeling that it is a very fitting accident that it should fall to me, a Welshman, to welcome you here to Scotland, on behalf of what is to most of you, I suppose, the English Agricultural Economics Society. I can assure you that our welcome is a very sincere and genuine one, and we hope that you will enjoy every day of your stay in this country.

As a Society we are particularly glad that this Conference is meeting in this country in this year which marks the end of the first decade of our Society's existence. During these first ten years we have developed from very modest beginnings to a Society of over 200 members. We have cast our net as wide as we possibly can, and amongst our members to-day you will find noble lords, trade union officials, tillers of the soil, learned professors of the dismal science, high-placed civil servants, several persons who are proud to be known as agitators, and last but not least a few hard-worked and badly paid professional agricultural economists. During our ten years of existence I think that we can justly point to much purposeful achievement. But this evening I am inclined to think that not the least of our achievements has been to discover the first President of the International Conference of Agricultural Economists. I make that claim, Sir, with all due respect to both Cambridge and Cornell.

It is not for me to enlarge on the purposes of this Conference. It seems to me to be quite enough that we have come here for a whole week to discuss our problems in common. We meet at a time when 'the world is (sadly) out of joint', but surely as economists it would ill become us to bewail the fact that we 'have been born (to help) to set it right'. We may differ in the way we go about this task, but there can be no difference as to the ultimate objective. It is, as I see it, to help try to achieve a higher standard of life for the rural peoples of the world. This task of ours is hard work, but the fuller life itself would not be much worth striving for if it was all hard work. It seems to me that the organizers of this Conference, particularly our hard-working Secretary, Mr. Currie, and his colleague Mr. Maxton, have realized the significance of this, for they have struck to a nicety the balance between work and leisure, and I hope that you

will partake of both during your stay here. The ancient city of St. Andrews is a good place for hard work, but so is it, the home of the royal and ancient game of golf, a good place for pleasure and play. Well then, once again, on behalf of the Agricultural Economics Society of this country I wish you all a most cordial welcome here and may every one of you spend a week of usefulness and pleasure. I will finish in one of the ancient tongues of these islands, and say—*Croesaw i bawb o bob gwlad*.

W. H. SENIOR, *Economics Branch, Department of Agriculture for Scotland*.

I have been called upon to represent the agricultural economists in Scotland. As this is a very small group, consisting of our department in Edinburgh and the departments of agricultural economics in the three agricultural departments of the North of Scotland College, the Edinburgh and East of Scotland College, and the West of Scotland College, under the charge of Dr. Imper, Mr. Witney, and Mr. Gilchrist respectively, and as you have already listened to many speeches of welcome, I shall be very brief. It is a very pleasant duty which I have to perform in offering you, on behalf of this very small band, a very hearty welcome to this Conference. I think Scotland was probably one of the last countries to organize its research in agricultural economics; it was not until 1927 that any serious official attention was paid to it. Probably those of you who know Scotsmen and their merits or demerits will realize that there probably was not much need for agricultural economists, when every individual in Scotland is, and has been, a practical economist. The need arose, I think, when it was realized nobody knew the other fellow's economic experiences, and it was necessary to pool experiences and to tap them. Hence the agricultural economists in Scotland. I am happy to add my little bit on their behalf to the welcome that you have had.

DR. CARL E. LADD, *Dean of Agriculture, Cornell University, New York State, U.S.A.*

Speaking for the Americans, I am very glad to have the opportunity to say a word of appreciation of the fine welcome that has been extended to us not only here to-night but also during the past few days when we have travelled through all Scotland. Having been under the influence of the Scots for so long and having been thoroughly inoculated some years ago by John Currie, I have become so nationalistic in my viewpoint that I resent the reference of the Englishman speaking from Wales that this is a cold, hard country. It certainly has given us a warm welcome, so warm in fact that the

papers report that the two warmest days in history occurred in the past week. Without twisting our phrases too far I might almost say that you have welcomed us biologically and 'socialologically' and economically. 'Socialologically' you have given us a right royal good time; biologically you have shown us the finest of crops; and economically you have placed, during the past week, our business affairs and our finances under the management of a Yorkshireman and a Scotsman.

I think our President is entirely too modest in his reference to the beginnings of this Conference. It was only through his helpfulness and his stimulation that the mere germ of an idea grew into a plan and a programme and a conference. I think of that first year at Devon when we were entertained so royally by Mr. and Mrs. Elmhirst and had such a grand time. Like twenty others here to-night I may claim to be a chartered member. I almost hoped that we might receive a decoration so that we might use it to-morrow night. We had many worries in the first Conference. We worried when we saw Dr. Zörner being taught English by a man from Iowa and shortly afterwards by a man from Scotland. When I hear his excellent English to-night I wonder how he was able to divest himself of the various dialects.

From the very beginning we had in mind that we would try to accomplish several things through this Conference. We hoped to bring together the experienced men in the field of agricultural economics in order that we might all enjoy listening to them in the discussions and the addresses. But we also definitely planned from the beginning on bringing to this Conference in some way or other the younger men whom we hoped and thought would be the leaders in agricultural economics in the future. We hoped to help them to get across the waters to meet with their colleagues in the same field perhaps ten or fifteen years before they would be able to do so on their own resources, and that I think has worked out quite well. Without referring to the many people who have come to hold important positions since that Conference and who are not here with us, I might remind you that in that first Conference when we were picking young men whom we thought were going to rise in their work in this field we had with us Henry Wallace, now head of the Department of Agriculture in the United States, and Dr. Jutila, now head of the Ministry of Agriculture in Finland, together with many other people whom I will not embarrass by mentioning to-night. And so this Conference seems to have succeeded quite well in some of those early objectives.

We are very happy to be here, and may I say, Mr. President, that

when the regular meeting opens to-morrow morning the Americans will be there, if not with bells on, at least at the sign and under the call of the ancient cow-bell.

PROFESSOR H. ZÖRNER, *University of Berlin, Germany.*

In spite of all the friendly comments that have been made to-day on my knowledge of English, I prefer to speak in German. And I recommend all those of you who understand my German as little as the others understand my English, to use the ear-phones. Dr. Rolfes will give an English translation.

On my own behalf, and, I believe, on behalf of many others coming here from other countries, I wish first of all to express my thanks for the invitations to this Conference and for the fine preparations that have been made here towards its success. These preparations awaken in us the confidence that this Conference will take its course in the same spirit as the previous meetings. Our meetings have always had a special character which makes them something different to big congresses. We have always met in an unofficial capacity without official instructions, and we have met to have a free exchange of thoughts. I would scarcely care to state that our papers are an inevitable evil, but I would like to say that the opportunities of personal contact are at least of equal value. When I think of the first meeting at Dartington Hall, where forty of us lived together like one great family, and where this meeting led to true friendship, then I must regard this meeting and the growth of friendship between men of different nations as immensely important, particularly in these times in which the economic and political development of the various countries often renders mutual understanding so difficult. I think it is very essential that there should be men in all countries who know each other, and who can bring to each other an understanding of what is happening in their countries. It is not without great difficulty that the effectiveness of a gathering such as ours is maintained, because it does not depend on a rigid organization or on official support; it is not without difficulty that we insure that a meeting such as ours will not become merely a gathering of more or less pleasant people coming together to chat; and it is not without difficulty that we attain for such a conference a measure of effectiveness. That the co-operation has been preserved, that our conferences remain something more than merely pleasant gatherings, that they come to be effective working sessions—for these we must primarily thank our president, Mr. Elmhirst. His untiring efforts, his travels, serving to keep alive the personal contact with the various

countries, his extremely fine diplomatic gifts, which unravel all difficulties that may arise, which smooth out all variances of opinion with a light hand and a kindly smile—all these we must thank for the possibility of having such a meeting as this and for the successes we achieve without any formal organization. The preparations which have been made at this beautiful spot at which we once again gather offer the promise that this meeting will be characterized by the same spirit as all previous ones. Once again, I wish to thank all those who have been responsible for these preparations. The field is tilled, it is for us to sow the seed and to see to it that it bears good fruit; that is the common task of all of us.

PROFESSOR O. H. LARSEN, *University of Copenhagen, Denmark.*

On behalf of the Scandinavian representatives at the Conference I want to express our appreciation of this meeting in Scotland and of the opportunity we have had of seeing some Scottish farms. I know that all from my country will have been interested in the farming they have seen on the excursion in the past week, and in what they will see in the week after the Conference. We have much to learn from Scottish farming, and I personally have gained the impression that all the farmers we have seen have learned the art of making money—which, in these times, is a very difficult thing. I hope that all who saw them in the past week will always remember the tour; for myself and Mrs. Larsen, I can say that we will never forget it. I hope, too, that the results of this representative conference will provide a little help to farming throughout the world. It was before the crisis came that we first met at Dartington Hall in 1929, and since then we have been passing through trying times. In Denmark especially has that been so, though in the past year conditions have improved somewhat. It is to be hoped that conditions will continue to improve, and that the meeting together of representatives from various countries at this Conference, and the relating of their experiences and the presenting of the results of their investigations, will help a little towards that end.

I want to thank you, Mr. President, for your welcome to us, and I want to thank also all the members of the organization who have had the very hard work of organizing this Conference.

PROFESSOR J. E. LATTIMER, *MacDonald College, Quebec, Canada.*

It is a privilege and pleasure to have the opportunity of responding to the warm welcome which we have received. It is also a very great pleasure to renew acquaintances and to enjoy again the good

fellowship which always prevails at these conferences. Some of us have already enjoyed so much the tour through Scotland in the past week and I take the opportunity of expressing our appreciation to those who acted as our guides, and especially to Mr. Duncan who, with untiring patience and inexhaustible humour, so ably looked after us. Such an excellent prelude to the Conference as the pleasures of the past week forecasts a most successful conference.

OPENING ADDRESS

By the President, L. K. ELMHIRST

THE question most frequently asked me by our members during the past two years has been: What is to be the subject of this Conference? Reading through your programme, you will see quite a number of gaps in it, with afternoons or evenings free. As specialists and experts, it has seemed to us in drawing up the Conference programme that you could not have too much time to get to know one another and to discuss in a personal way your impressions of the speeches that have been given. As specialists it is our privilege to regard the world as fundamentally one; we are not privileged to break it up into sections, into parties, into nations. As members of this International Conference of Agricultural Economists we must regard the problems of this world as fundamentally one. For that reason every personal contact we make here is, from my own point of view, a very worth-while investment, an investment that may be of inestimable value during the next five years. These last two years have been filled as you know by wars and rumours of war. Our next five years, if we are to have peace, must depend on this fellowship of experts that has been growing up slowly and gradually among those who are bound to treat human affairs as one single problem.

But this personal contact is only the base of our structure. The designing of the Conference itself and the programme has not been easy. We have had to take peace for granted. We are an international Conference. We have had to take for granted that there is such a thing as a world common weal, a 'commonwealth' of nations, and that for the purpose of establishing this commonwealth there must be a free exchange of ideas. I know that there are many of us who are anxious to see a much freer exchange of goods; but, at least from my own point of view, the most valuable goods of all are ideas and thoughts, and once we establish the free exchange of those, crossing national boundaries and party boundaries, then there is likely to be a real chance for the free exchange of goods. I think we may have been guilty of putting the cart before the horse and of expecting a free exchange of material goods to take place before we have begun to find a fellowship of ideas. In this country, for instance, questions like these are continually being put to our agricultural economists: 'What degree of self-sufficiency can you agricultural

economists offer us in time of war and for national defence?' Or 'Can you as agriculturalists solve our unemployment problem?' These are typical of what I think we may call siren voices beckoning us away from the fundamental aim of this Conference. For we, as you know from our constitution, have to apply research and the findings of research to the improvement of economic and social conditions relating to agricultural and rural life in all countries. Therefore, as I say, the building up of this programme has not been easy.

I shall take you back very briefly over the programmes of the last three Conferences. In 1929 we were new to one another. Our discussions and papers were filled in the main with the technique of research, with methods of research. We were sharing for the first time our methods, our experience. In 1930 we continued that process, but our whole Conference was coloured by the deepening of a depression throughout the world. In 1934 we concentrated much of our discussion upon the attempts of different nations to meet and to stem the tide of agricultural depression. But even at Bad Eilsen there were voices calling for a more fundamental approach to the problems of agriculture, asking us the question: What was the place of agriculture to be in the future of civilization, in a world at peace? There was a definite demand that we should begin to take a longer view—a more fundamental approach than just the immediate political measures needed to deal with immediate political situations. And so we have come to a time when we must consider agriculture as a way of life and not only as a means of livelihood.

There was a time not many years ago when the scientists thought that they had in their hands the cure to agricultural slumps and shortages. Apply science, they said, and the world would have all the food it wanted. Then came the economist to show that science alone would not be enough, and that it could not solve the problems of exchange. Meanwhile the sociologist, off in a compartment of his own, was thinking of the social and psychological problems of rural life, often without any regard to economic and scientific principles. Have we not come to a time when we must unite and synthesize these three studies? When neither scientific fact and discovery nor economic thinking nor sociological and psychological truth are left in separate compartments but brought into some kind of synthesis, what is the place of agriculture in the commonwealth to be? Are we prepared as yet to face the challenge of agriculture as an industry, an industry more ready every day to offer efficient service to the multitude of consumers of its multitude of products? Is our

agricultural industry organized to meet other industries on their own ground in the exchange of goods and on an equitable basis? Is agriculture as an industry so well organized that it is able to contribute its share to the social services that every country and every state wishes to offer equally to all its citizens, rural and urban? When we can answer all those questions positively, then I think we can say that agriculture is beginning to take its rightful place in our civilization. It is to Professor Scott that we have given the task of opening up that field of discussion this morning; he is to discuss the relation between agriculture as an industry and the other industries.

Behind this industry of agriculture lies a welter of varieties and types of farm organization, peasant farming, crofter farming, share croppers, tenant-landlord farming, company or corporation farming, state farming. Those of you who have been on the tour this last week have seen a wide variety even in this small country. In the United States we sometimes forget the share-cropper system in our discussions of family farming. In Great Britain we forget the small-holder and the crofter when we are discussing the landlord and big estate management. And in considering all these different types, it is not only the economic question that we must ask. We must also ask what is the quality of life that these different systems offer to those who partake of them. The two factors are linked closely together, the means of livelihood and the quality of life. When I say quality of life, I am implying that behind the farming system whatever its kind there must be a structure of social services, health services, educational services, and proper provision for transport, housing, leisure, and recreation. What standard of social services is this or that kind of agriculture able to support? What variety is this or that State able and willing to give to its agricultural population? In an industry which daily becomes more technical and more highly skilled, are we still able to say that the best brains of the countryside remain and flourish in the countryside? We have given to Bridges, Tolley, and Zörner the task of opening up that whole field of discussion.

But behind the social structure, behind the face of the industry lies the fundamental factor of the land—the land and how it is held. As you know, our vice-president, Dr. Sering, has set that as his own task; he and Professor Ashby will discuss the subject of Land Tenure, a discussion fundamental to the examination of our wider field. In England I am sorry to say that when we look at this matter of the way the land is held, we only see chaos. To-day in a certain place you may see an economic unit of farming. To-morrow, in

competition for that farm, the builder—the speculative builder—may walk in, the factory may be planted, an urban area may extend, a demand by the city for amenity for aesthetic satisfaction may be expressed—all perfectly legitimate demands. But who is to act as judicial referee between the farmer and those claims? Such claims are, I imagine, made in every one of your countries by one group or another. In England we have no referee, and that is why you may see so many unplanned cities, buildings, unplanted woodland areas and so many claims of all kinds made on the land with no one to see that society and the community get the best possible use from all its land resources. We have in many countries still to see anything comparable to the work by Cornell University in New York State in the separation of those marginal areas where men can no longer get a proper living. Many sections of the world need the kind of erosion programme which as some of you must know well has begun on a large scale in the Tennessee Valley and which is now being extended throughout the U.S.A.

The question then is no longer just that of whether farming makes or loses money, but whether or no our farmers are themselves good citizens. What chances have they to become good citizens? I think you will agree with me that too often we treat the whole question on a purely sentimental basis. We have in this country for instance a great deal of what I would call thatched cottage sentiment about farmers and rural life, and too seldom do we ask this question: How good a citizen is the farmer or rural worker? We talk of their sturdy independence and their rugged individualism, but not so often as we ought about the cases we meet of sheer unco-operative selfishness, of ignorance, and of a narrow obstinacy. We talk of a farmer as a good bargainer, but we say less about those who under-cut their neighbours. Some of our farmers are hardly farmers at all, but dealers and traders, and those of you who have had to try to establish or work efficient marketing schemes must know the difficulties of obtaining the co-operation of men who are only half farmers and half dealers. These are all questions that are part economic, part psychological, part sociological. And when we ask them, we must remember how often it happens that society has hardly given the farmer a chance. He has been insulated, isolated, and often disintegrated far away from the stress and strain of a modern world whose functionings he must begin to understand if he is to survive.

The treatment of him as an individual leads us on to the next part of our programme where we consider the industry and the soundness of the industry, its credit and use of credit, its technique,

its use of machinery, the economy of the farm, the processing and the marketing of its products; and, as we pass into that field of marketing, we come back from the individual farm right to the very basis of this Conference—the question of international marketing. I suppose if I ask you when farming in your countries last paid well, you would say not since the war. That is a tragic commentary. But we have had eighteen years since the war. Are we already looking for another? I think we may say that merely to aim at profit is not enough; that profit is an excellent measure of farming efficiency but not the final end and aim; and that, though war may turn over farm profits rapidly, the foundations of civilization are so mutilated and destroyed, and the years that follow so lean that they sweep into one great depression the farming industry and almost every other industry along with it.

Those of you who joined last week's tour stood for a moment on the field of the last battle on British soil. After nine hundred years of almost continuous war, most of it between England and Scotland, that last battle of Culloden was fought in 1746. To-day the flags carried in that battle by both sides hang together in the castle at Edinburgh. Are we prepared as English and Scots to return to those savage days? I think not. But when we look back at the last war and the result of it, what do we see? A standard of life, a standard of living, falling, falling, falling. And as it falls each country, in desperation, tries by itself to stem the tide and hold back the fall. Credit goes, confidence goes, trust is broken, markets go, overheads rise. The drift goes steadily down. Unemployment comes, and, with unemployment, that psychological disintegration of men and women, boys and girls for whom no one has any more use—the unemployed man, who feels he does not belong. Each country takes all kinds of desperate measures to try to prevent the barometer falling; national Governments, united fronts, revolution, fascism, war, civil war, each country in isolation has to face that terrifying picture of a fall in the standard of living which means that people living at the bottom of the scale get so desperate that they have nothing to lose by calling on the use of force.

Just round the corner is the chance once again to swop goods, to swop ideas, to break down that isolation, to start the barometer moving upwards again. With what difficulty we turn that corner! We try public works of all kinds for ourselves (some interest bearing, houses, and roads, others non-interest bearing, war works, defence works), but the solution of that problem of relating consumption to purchasing power still awaits us, for behind the barriers of tariff

walls we build up subsidized home production and make every kind of exclusive national arrangement. How are we to get over these barriers? Professor Forrester is to open up that subject.

And now before I finish I would like to give you three examples of encouragement, three examples from my own experience during these last two years, which I think show the way the wind is blowing. Each of them was the direct outcome of your own conferences. In the first case, I was talking about our Conference to a certain cabinet minister responsible for the Treasury of his country. His remark was this. He said that in his Treasury official contacts with officials of other Treasuries were still far too impersonal, far too slow, far too inefficient and inhuman. 'I don't think', he said, 'I have one man in my Treasury who knows personally one man in the other six most important Treasuries in the world. If only one or two of my officials knew one or two officials in other countries personally and intimately as your agricultural economists do, I see no reason why there should be any more wars at all.' There was another case not long ago where, owing to the meeting of many of us in these conferences, officials and experts of five Governments met quietly over a week-end to discuss their technical problems together. I was told afterwards that that could not have happened without the opportunities of informal meetings given by our conferences. In my third instance two countries, A and B, decided to try to climb their tariff wall. Brave countries they are. A started to draw up a Bill to make it possible for the goods of B's farmers to cross the border, but A was anxious lest A's own farmers would protest, and we know how easily they can express their protest. The economists, the agricultural economists of A and B, got together and A's economists went out on the radio to explain to their own farmers that if the Bill went through, although the direct result might seem harmful to them, the indirect result of the exchange was likely to be beneficial. The Bill went through without any farmers' opposition. Now we know that every nation is beginning to try, by barter, by three-way exchange systems, by every device in its power, to overcome this political façade which seems so difficult to get over. It is in such a Conference as this that we must share our experience and pave the way to the ultimate removal of all barriers that are not legitimate barriers. When I say legitimate I mean barriers which are likely to prevent us achieving that commonwealth, that common weal, to pursue which we exist.

THE RELATIONS OF AGRICULTURE TO INDUSTRY AND THE COMMUNITY

W. R. SCOTT, D.PHIL., LITT.D., LL.D., F.B.A.

University of Glasgow

IN extending a most hearty welcome to all the members of the Conference on their meeting in Scotland, it is not inappropriate to introduce the subject on which I have been asked to speak, by quoting two well-known lines of the national poet, Robert Burns, namely

O wad some Pow'r the giftie gie us
To see oursel's as others see us!

These lines seemed quite extraordinarily apt when I read in the brilliant book of Professor Stapledon, which glows in every page with an intense love of the soil, the following passage—'the immoral and hand-to-mouth economics of these days the nation can no longer afford and must no longer tolerate,' and elsewhere such economics are described as 'the quintessence of immorality and short-sightedness carried to the point almost of madness' (*The Land*, 1936, p. 58). If, in however humble a manner, I may be considered to some extent as a representative of ordinary economics, this is seeing oneself as others do without any redeeming feature, and one's teaching, perhaps, as 'the quintessence of immorality' which is carried 'almost to the point of madness'. I say 'perhaps' for there is some doubt whether these vigorous epithets are intended to apply to general economic analysis—a subject so self-contained and arid, that it is difficult to imagine how it would rouse any one to enthusiasm, much less to somewhat lurid indignation—or to the great mass of practical devices, comprising both state policy and the trend of action of all those who have to deal with the land. From the general tenor of the book, it is the latter which is intended in the main; although, in so far as the current results of economic theory either condition, or seem to condition, the action generally called economic, analysis and theory likewise are liable to fall under the castigation of this Juvenal of the countryside.

What seems to be fundamental is the relation between the subject variously named Political Economy, Economics, or Economic Theory on the one side and Agricultural Economics on the other. The first step is simple in so far as economic analysis may be either

'pure' or scientific in the strict meaning of the term or, on the other hand, it may be 'applied', in the sense that general principles of economic analysis are developed and exemplified in some particular field. For instance, Edgeworth constructed a theory of what he called 'pure Public Finance', but since much of actual finance, such as expenditure, taxation, public debts, &c., is concerned with practical questions, any useful inquiry and exposition must necessarily consist of practical applications of general economic analysis. To a considerable extent the same is true of 'Agricultural Economics'. Here also the application of General Economics does not carry us very far. In other words the development of economic principles in relation to agriculture would not provide material of any size in proportion to its importance. Though it may be contended that this result is the fault—or at least the misfortune—of Economics proper, the fact remains. A great part of the content of Agricultural Economics consists of inquiries and generalizations relating to what may be described as the business side of the industry. In precisely the same way I can conceive Shipping Economics, the Economics of the Steel Industry, the Economics of the Coal Industry,¹ and so on. This distinction will be found to be of some importance later, for the first aspect—that is the establishing of general economic principles—considers economic effort (including agriculture) as a whole; the second tends to concentrate attention upon agriculture or even upon some of its minor subdivisions. I have no intention to claim a superiority for the former, but merely to draw attention to an essential difference, and one which in some connexions is of moment.

Another relationship is becoming of increasing importance. This is the growing connexion between Agriculture and State Economy. Not only so, but this relationship widens until in several countries there is a planned Economy of the State which is intended to embrace and co-ordinate all the activities—cultural, political, and economic—into one unit which will be, as far as possible, consistent. Such an aim—and every nation is affected by it to a greater or less extent—imposes an immense responsibility and at the same time, to some extent, a limitation on the agricultural economist. On the one side he has to advance the claims of agriculture to what he considers to be its due place in the National Economy of his country, and he has also to consider its world position. On the other side it has to be borne in mind that agriculture, while of undoubted importance, is only one side of the economic activity of a country. Therefore the agricultural economist, in maintaining the importance of his own

¹ A work under this title was published by the late Professor Dron.

industry, is in danger of placing himself in opposition, or apparent opposition, to other types of economic life, and the representatives of industry, commerce, and finance are likely to retaliate—with the result that economic activity (agricultural, industrial, and commercial) speaks with divided voices, and in consequence it is in danger of being less heard and attended to when national policies are discussed.

Some agricultural economists have a short and easy way of meeting this difficulty. They say, in effect (as for instance in *The Revival of Agriculture in Great Britain*), that the increase of agricultural production will create a new demand for manufactures and for commercial services. In this argument there is implied that the production of the nation is almost altogether a closed economy. If that is to be so, the real standard of living of a given group of countries which adopted this policy would be reduced. In fact, however, the conception of a closed economy for any highly developed country is an illusion. Each wants to continue foreign trade, emphasizing exports and preferring imports of raw materials for its industries. The tragedy of the situation is that the less developed countries (which, according to this policy, are to receive manufactures and export raw materials) are far from acquiescing in such a policy. While manufacturing countries are endeavouring to produce their own food at a higher cost than that at which they could import it, the less developed nations are feverishly creating new industries which they are determined to maintain, though in this case the costs of their products likewise are generally higher than those of the imported commodities which are to be displaced.

In the cool light of reason it is clear that at the root of modern economic policy lies the uncertainty of international political relations. If the policy of nations is to be determined by preparation for the danger of some future siege, then their activity, as a whole, can be no more than a choice of evils—and that not of the least of these. This truth presents a very subtle temptation to the agricultural economist. If the short transient period of agricultural prosperity during and immediately after the Great War be excepted, this industry has been in a state of depression for nearly sixty years. Now seems the heaven-sent opportunity for its recovery which, at first sight, seems worth pressing to the utmost. To a certain extent this is a well-founded claim; the danger lies in pressing it too far. The immediate position may be illustrated from the case of Great Britain. Professor Pigou and Mr. Colin Clark have made a recent calculation (*Economic Position of Great Britain—London and Cambridge*

Economic Service, June 1936) based on a comparison of the relative exchange values of British exports and imports. The special relevance of this calculation arises from the fact that the exports are mainly manufactures and the imports mainly food and raw materials. Therefore the changing prices of exports, in terms of imports, will give a fair indication of the ratio of exchange between manufactures and imports of food and raw materials. Further, as long as British imports were unaffected by tariffs or quotas, such ratios measured with reasonable accuracy the terms of exchange between manufactures supplied to the home market, and the domestic production of food and raw materials also supplied to the same market. It will be convenient not to go back beyond 1913 as a base, though using that year as a starting-point by no means implies that the basis of exchange as between manufactures and food together with raw materials was then in equilibrium. Subject to this limitation, taking the ratio of exchange in 1913 as 100 it had reached 120 by 1924, which means that in 1924 the same typical sample of British exports—chiefly manufactures—purchased 20 per cent. more imports of food and raw material. In other words, speaking generally, the exchange had turned in favour of manufacture and against agriculture by 20 per cent. The ratio was almost exactly the same in 1929. After that, until 1933, it resumed its movement in favour of manufactures, through causes with which all agricultural economists will be familiar. Between 1929 and 1933 the ratio of exchange favoured manufactures by 24 per cent. In other words the advantage gained by manufactures in twelve years was followed by another of rather more in five years. Since then there has been a reaction. The ratio which had favoured manufactures by as much as 44 per cent. from 1913 to 1933 fell back to under 38 per cent. last year, and in the present year the reaction has not only been continued but has become very greatly accentuated. Before discussing some of the inferences which may be drawn, it is worth remarking that through the appearance of import duties and quotas the British agriculturalist has not suffered the full incidence of this ratio in the most recent years, but it has fallen in its entirety on those who export food and raw materials to the British market.

The general result presents one of those paradoxes which are so common in the age of transition in which we live. Over a period of twenty years—1913 to 1933—it would have been a reasonable anticipation that, through natural conditions, the ratio of exchange as between agriculture and manufactures would turn in favour of the former, not the latter. Still more paradoxical is the fact that the

obvious explanation of a slower rate of new inventions and other improvements in manufacture is far from applying, for these have been developed with great rapidity.

The considerations which have been sketched in rough outline afford a prima-facie case for a very considerable reduction in the premium which manufactures enjoy with respect to agricultural products. At the same time we should be exceedingly careful not to press for this reduction with undue rigidity. When full allowance is made for the effect of variations in weather (which after all tend to equalize themselves over a complete cycle) agricultural production suffers from an unnecessarily high degree of inelasticity. Compare, for instance, the visible supply of wheat in recent years with the variations in output of the United States Steel Trust, though the latter is not a good example, since, owing to higher overhead and fixed charges, these monster firms cannot make their production so completely elastic as those of smaller size, which are less overgrown.

The existing inelasticity of agricultural production, as contrasted with most manufacturing industries, merits some consideration. If we consider such production in the widest sense, as including all products of vegetable growth, there is a difference between those which are consumed as food and others used as raw materials for industry. The maladjustment of supply to demand is appreciably more marked in the former than in the latter—the reason being that the outlets for consumption of such manufactured goods is greater than those for food. To some extent recent studies in nutrition may do something towards redressing the balance. Thus the Interim Report of the Astor Committee of the League of Nations on *The Problems of Nutrition* stresses the need for an increased production and consumption of the ‘protective foods’, such as fruit, vegetables, eggs, and dairy produce. Assuming such increased consumption took place, it would not solve, but might rather intensify the existing maladjustment, if the production of such commodities were super-added to that already existing, instead of being accomplished by the diversion of productive forces from some of the staple forms of agriculture to increasing the output of these so-called protective foods. In a well-organized internal market, the former may be accomplished. In a world market it is unlikely without long delay involving great loss and misery in certain countries. In a world market where goods move with moderate freedom, over-production, which is the result of a temporary maladjustment of supply to demand, is not the bugbear which it appears to the popular imagination. A temporary reduction in prices discovers new outlets for the

commodity, the demand for it increases and, later, prices rise. Agricultural production—consisting so largely of food—appears to falsify this general tendency, at least as regards cereals. It may be suggested as a possibility that agricultural economists might be able to discover new uses for the products of the soil and, by finding new demands, bring consumption into line with production.

This aspect of the case depends on a free, or comparatively free, transit of goods from country to country. Theoretically opposed to this is the closed national economy. Though many writers deal with this as a concrete fact, it is in fact a pure abstraction. Countries which tend towards it in their national policy, at the same time endeavour to foster exports and, in so far as they succeed in exporting, they must, over a period of years, import. The general tendency since the crisis has been for most countries to occupy an intermediate position in which the national production has been regulated and directed according to the ends of State policy to a considerably greater degree than it has been before. The industrialized countries have, with almost one accord, been devoting increased attention to the encouragement of agriculture.

From the world standpoint this introduces a problem of surpassing interest. The standard authorities on the trade cycle agree in finding the motive power for the recovery from the acute depression which follows a severe crisis in bountiful harvests or other causes which provide cheap food. Reduced cost of living with the consequence of low costs of production of manufactures enable savings to be increased. The investment of these creates a new demand for capital goods, which, in turn, results in more employment and gradually the depression begins to pass and trade becomes more active. As employment improves the demand for food and raw materials increases and the prices of foodstuffs recover. In recent experience there was a hitch or a long time-lag in the working out of this sequence. As every agriculturalist knows, the prices of most agricultural commodities have been abnormally low. Capital began to be accumulated, but it did not find its way completely into productive investment, and the recovery which should have followed was delayed. Thus the world crisis—and still more the agricultural crisis—was prolonged. To some extent, as affecting the countries which constitute the world's granaries, this may have been an instance of bad planning. The Wheat Pools of Canada and the United States, as well as somewhat similar measures in other grain-exporting countries, resulted in an accumulation of stocks, precariously held, which it was feared might at any time overwhelm the grain market. In such

circumstances prices were necessarily depressed. As far as present information extends, the anticipated cereal shortage of the current crop-year is likely to dispose of the menace of these overhanging stocks, with the result of an advance in the prices affected.

Turning to industry, the delay in recovery was marked by cheapness of money, unemployment of capital, and the general complaint of the limited field for new investment. All this points to conditions of continuing uncertainty. As far as material or natural conditions were concerned, the stage was set for trade recovery considerably before it appeared. It was the psychological requirement of confidence which was absent. Political uncertainty was one factor, making for caution and a general holding back from new enterprise; while, perhaps not unconnected with this, the concentration on domestic industry resulted in a continuance of acute depression in external trade. These conditions reacted upon agriculture in various ways. The prevalent concentration on domestic production has afforded a stimulus to the agriculture of each country affected by it; but, on the other hand, the same attitude has been prejudicial to those other countries whose chief exports were agricultural products. Thus, from the agricultural point of view, a national gain may involve an international loss. The present contracted state of international trade is likely to involve an ultimate loss to world agriculture. Popular imagination places manufacture and agriculture in opposition to each other, whereas they are in reality complementary. The major demand for agricultural products comes from industry, not only directly but also indirectly, while, similarly, when the demand for manufactures is analysed much of it depends on the prosperity of the agricultural community. This applies in large measure even to the provision of important capital works, as for instance the building of railways and steamers for the opening up of grain-growing districts in the last third of the nineteenth century and the construction of barrages for purposes of irrigation in the twentieth. A contracted world trade diminishes the effective demand of the industrial population, and agriculture suffers. By a strange paradox it may suffer even more than industry owing to the greater rigidity of its conditions of supply, as at present organized. Opposition between industry and agriculture leads to one certain result, namely that both suffer from it. Underlying the infinite causes of surface disagreements there is a fundamental unity of interest. This is liable to be overlooked in the dust of the small conflicts which are constantly arising between them. Above all things, it is necessary that both industry and agriculture should try to understand the special

circumstances and the special difficulties of the other. As already indicated, the unfavourable terms of exchange of manufactured goods against agricultural commodities, from the point of view of the farmer, are beginning to be modified. Once the process has started, if no great political upheaval takes place, it may be anticipated that it will continue. In fact, owing to the greater power of manufacture to adjust itself to a diminished demand, during recent years many manufacturing industries, owing to reduced output, have in fact been working under conditions of diminishing, instead of increasing return. Their plant was adapted to a given output. With a much smaller output the overhead costs and standing charges had to be borne by such lesser output with the result that, for the time, production was carried on at an increasing and not a diminishing cost. Improved trade has begun to rectify this position, but the final solution will depend on a very considerable improvement in the volume of international trade. Through reduced manufacturing costs, the effects of competition will quickly transfer the benefits of that reduction to consumers.

On the other side, the chief interest of industry in agriculture (apart from providing a market for its products, which has already been mentioned) is in the relative prices of food and such raw materials as are of a vegetable nature. As regards food, in particular, it is to a considerable extent an element in the fixing of rates of wages. This presents a problem of outstanding importance to the agricultural economist. He has to discover—and that as quickly as possible—how to improve the processes of agricultural production, so that the costs of a given quantity of any product may be lowered. It is needless to mention the difficulties. They are many, but this problem must be advanced towards solution. After all, industry has been concentrating on it for about a century and a half; in agriculture it has been little more than begun. The way of approach over a moderately long period is likely to differ from that in most growing manufacturing industries. It will be less in the expanding of total production (for in the long run the tendency towards diminishing returns, though capable of temporary suspension, is likely to operate) than in a more efficient use of the conditions of production. In particular, the resources of science in aiding agricultural efficiency are only beginning to exert their influence. Increased economy, once agricultural prices have reached their new basis, will extend demand for the various products of the land. At some date in the future there will be the problem of an optimum production, for, with an increasing demand, there will be the problem of whether it can be satisfied

without the consequent increased production being obtained only at an increasing cost, which, in turn, would limit the economies secured by greater efficiency.

This seems to be looking unduly far ahead. It may appear fanciful to talk of efficiency reducing future prices when so much of the agricultural community is at present in distress, and perhaps, even more, to envisage an increased demand when there have been endless complaints of glutted markets of almost all the primary products.

It may be suggested that agricultural economists have not escaped wholly from the danger of being shut up in the 'short period'. The low prices of agricultural products, as compared with those of manufactures, have arisen from the causes which have been explained. Essentially, this cannot be other than a temporary phenomenon, and the situation will right itself. What I am now endeavouring to consider is the line of advance when that stage, so long hoped for, will have been reached. As it seems to me, there are two tasks, each of surpassing interest, awaiting the agricultural economist. There is that already mentioned, which is to some extent speculative, as to whether products of the soil can be made raw materials for industry to a much larger extent than at present, especially whether products, now used as food, can become such raw materials. The other problem is one which thoughtful people admit is urgent, namely the improvement of agricultural production and distribution in order to secure greater efficiency and both normal profits and a lower price to the ultimate consumer. Industry has been concentrating on this problem for more than a century and a half. In agriculture its consideration has been little more than begun. Agriculture must solve it in its own way and under its own special conditions. While this adds to the difficulty, it is quite essential. If this immense problem is faced from a wide and comprehensive standpoint, it offers, as I see the position, the only opportunity of co-operation and mutual support between industry and agriculture, instead of a conflict in which the ultimate chances of agriculture being successful are very far from promising.

DISCUSSION

R. R. ENFIELD, *Ministry of Agriculture, London.*

I am sure you will agree with me in expressing to Professor Scott our gratitude for his most interesting and stimulating paper. He has dealt with a very large subject, and I wish, in opening the discussion, to touch upon only one or two of the very many issues

raised, hoping that other branches of the subject will be discussed by subsequent speakers.

The relationship of agriculture and industry, to my mind, has not only changed both nationally and internationally during the last six years, but I suggest has changed for good. It is where Professor Scott regards some of these results as temporary that I feel most disposed to differ from him.

Professor Scott emphasized, as one aspect of the change, the movement in the terms of exchange in international trade, favourable to industrial countries and unfavourable to agricultural countries. Other aspects are the reduced volume of trade, the changed distribution of world agricultural output, the widening difference in the cost of production between importing countries and exporting countries, and differences in the character of the policies pursued in those countries respectively.

A few years ago I think we all would have been inclined to regard many of these changes as transient symptoms of depression, likely to disappear when the depression was over. I want to suggest that this is not likely to occur. Partly owing to the intensity of the depression, partly to its protracted character, these changes are assuming a more permanent character and in many respects confront us with a new world.

It is worth while to pick out the salient points in the agricultural history of the last decade and to examine how this has come about. There are three important periods to consider, 1925-9, 1929-32, the period of very severe depression, and 1932-6 which has been a period of recovery. The first of these, from an agricultural point of view, was characterized by certain important features. Firstly, there were some definite signs of over-production in the world, using that term as it is ordinarily used. Production of sugar, coffee, wheat, and some other commodities was expanded in excess of the average agricultural output. Secondly, there was a considerable growth in agrarian protection in Europe. The year 1925 was a low point, at which a number of countries had imposed no duties on some products now very highly protected, and at which the general level of protection all round was low. Thirdly, during that period there was a substantial growth in international lending, a point which in my view has had a tremendous effect on the subsequent course of the depression in agricultural countries. The issue of foreign securities in the United States, United Kingdom, the Netherlands, and Switzerland, the main centres of international lending, between 1924 and 1928 amounted to no less than 9,000 million dollars, of which the

agricultural countries alone borrowed approximately 6,000 million dollars. As far back as 1926, Canada, New Zealand, India, Argentina, and South Africa had an excess of external payments over receipts, and had to balance their external accounts with fresh borrowing. This created and was bound to create a potentially unstable situation in which debtor countries could be confronted with very serious difficulties in the event of a heavy fall in the prices of their exports.

The second period, 1929 to 1932, was characterized, firstly, by a catastrophic fall in prices, secondly, by a sharp rise in agrarian protection in Europe, and, thirdly, by a fall in industrial output, a growth of unemployment, and a reduction of urban wages in most industrial countries. The fall in consumers' buying power resulting from the decline of industrial output was, I suggest, the main cause of the fall in agricultural prices. World industrial production declined no less than 37 per cent. between 1929 and 1932, but world agricultural production, according to the League of Nations index number, remained practically stationary. In addition to this, there was an almost complete cessation of overseas lending.

Taking the agricultural countries at this time, the fall in demand for foodstuffs from importing countries, coupled with the severe and growing protection, was bound seriously to affect them and to shift on to their shoulders a large part of the burden of the world agricultural depression. Such an event, combined with a reduction or cessation in lending, confronted these countries with a tremendously difficult problem in balancing their external trading accounts. They did so, as is generally known, by efforts to increase exports through export subsidies and other measures of direct assistance, by measures to diminish imports through the application of import duties, and lastly by depreciation of currencies. In 1934 the Australian, New Zealand, and Argentine currencies were all depreciated, even in relation to sterling, by over 20 per cent. But in addition to this, agricultural exporting countries were forced to adopt what might be described as measures of internal deflation. Prominent amongst those were the measures for refinancing agricultural indebtedness. There also occurred—I will not describe them as measures but as consequences of the depression—a substantial lowering of wages in almost all exporting agricultural countries and a fall in land values. Now I suggest that the effect of these events was a material reduction in the costs of production in those countries and, coupled with exchange depreciation, it resulted in a lowering of the prices at which agricultural products could be sold abroad.

Unfortunately the rival policies, of protection in importing countries and various forms of relief in exporting countries, reacted on one another, and there can be no doubt that the depression was prolonged for the world as a whole by measures intended to alleviate it in individual countries. But the important point for the purpose of our discussion to-day is that these measures profoundly affected the relationship of agriculture and industry. In so far as protection in importing countries and subsidies, debt reduction, and other forms of relief in exporting countries, imposed a burden on the general community for the benefit of agriculture, it was a burden which eventually had to be borne by non-agricultural producers, that is to say, mainly by industry. The refinancing of mortgages and other debts in overseas countries is a conspicuous example. Agriculture borrowed the savings of people who were willing to lend them. Those savings very largely were derived from the savings of industry. In so far as the debts owed by agriculture to its creditors were diminished by refinancing, to that extent agriculture benefited at the expense of industry.

Thus this period went a long way towards creating the conditions we are confronted with to-day. On the one hand, the more rapid fall in agricultural prices caused a movement in the terms of exchange between industry and agriculture in favour of industry, as Professor Scott has pointed out. On the other hand, State action, in so far as it affected the relation between agriculture and industry, caused an adjustment favourable to agriculture. The other notable feature of this period was the expansion of agriculture in protected countries to which Professor Scott also alluded, and the heavy decline in international trade, particularly in foodstuffs.

The last period, 1932-6, has been a period of economic recovery. The recovery, however, has been primarily a domestic recovery. The great expansion of industrial output has not been accompanied by a corresponding increase in international trade. To quote the League of Nations indices, world industrial output, excluding Russia, rose from 69 in 1932 to 92.4 in 1935. On the other hand, trade in manufactures showed only a slight rise—from 56 to 64—between 1932 and 1934, while trade in foodstuffs actually fell. The leaders of industrial recovery were the United Kingdom, Japan, the Scandinavian countries, and the United States. The recovery is reflected to some extent in the recovery of agriculture, but from the point of view of trade the increased demand from industrial countries, arising from the increased industrial output, was largely deprived of its effect by the continuation of high protection in certain countries.

It did not lead to a relaxation of high protective tariffs, indeed the shifting of agricultural production to the protected countries has continued. In 1935 world¹ agricultural production had increased by about 6 per cent. over the average of 1925 to 1929. Continental Europe,¹ the great protected area, however, increased its production by 15 per cent., and I should imagine more recent figures would show an even greater expansion. On the other hand, the efforts of agricultural countries to maintain their balance of payments by increasing industrial protection have raised their share of the world's industrial output. This share, which was only 11 per cent. in 1928, has now risen to no less than 24 per cent.

Now I suggest that neither the new agriculture created behind the agrarian protection of Europe, nor the new industries created behind industrial protection outside it, are likely to be abandoned. Vested interests have grown up on either side and policies are almost certainly likely to be directed more towards the maintenance of this production which has cost so much to bring about, than towards its abandonment. Here we have another change in the relation between agriculture and industry both nationally and internationally, and the world is for good or ill paying more for its food and for its industrial products than it need. This distortion of world production is mainly the outcome of action taken, in the first instance, to assist farmers in the face of severe crisis. But policies initiated largely as emergency measures, if continued over so long a period as has now occurred, inevitably tend to be absorbed in the permanent régime of countries, and it becomes increasingly difficult to retrace the steps so painfully trodden.

One thing might have brought about a recovery towards conditions existing before 1929, and might have led to the removal or modification of the vast superstructure of government control. That would have been a world-wide rise in prices. I think this was undoubtedly the expectation of most business men and economists in 1932, and many measures were regarded then merely as temporary, designed to bridge the gap until the recovery of prices took place. This expectation has now been considerably modified, though there are some who take the view that a world-wide rise in prices is still in store. In the absence of a general rise in prices, however, I suggest that there has been a tendency to establish a new system of world agriculture which, so far as importing countries are concerned, depends for its very existence on the continuation of protection. Withdrawal of this protection would mean depression and crisis in

¹ Excluding Russia.

every importing country of the world. Exporting countries for their part have been faced with the necessity for adjusting themselves to a new situation far less favourable to their agriculture than they were accustomed to before the depression, and the drastic steps which they have taken to liquidate the depression have, in their collective effect, enabled those countries to maintain or even to expand production on a much lower level of costs than formerly. The widening of the gap in the level of costs of production between protected countries and exporting countries respectively seems to me one of the significant results of the events of the last four or five years.

The situation thus approaches deadlock. While high agrarian protection in Europe is the chief obstacle to recovery of trade in agricultural products, the low costs at which agricultural exporting countries are now able to operate is the chief obstacle to a reduction of those protective barriers. So far-reaching has been the intervention of State policies in agriculture that, in my view, we can no longer rely as we could formerly on the interplay of economic forces to correct or maintain the balance between production and consumption. Formerly, when protective barriers were low and export subsidies non-existent or at any rate very infrequent, the volume of agricultural production was determined by competition arising out of differences in costs of production in various parts of the world. To-day it is to a very important extent dependent on the willingness of Governments to support production irrespective of costs. It is perhaps not unreasonable to say that in the conditions of to-day a rise in prices tends to evoke an increased agricultural production; a fall in prices tends to evoke increased government assistance. It is this conflict of economic, social, and political forces which makes the world's agricultural problem so extraordinarily intractable.

Now I would suggest that we must beware of regarding this situation as something transient, something to be recovered from. Whatever may be desirable as the outcome of the present conditions, it is at least possible that this highly artificial situation, in which State action plays so important a part, will persist. It is more likely, in my opinion, that it will do so, than that we shall see a return to conditions in which equilibrium was maintained by what we used to call the ordinary interplay of economic forces. It is at least possible therefore that the situation may remain one in which the terms of exchange between agriculture and industry have moved perhaps permanently against agriculture, but in which State action, as between industry and agriculture throughout the greater part of the civilized world, has favoured agriculture at the expense of industry. That is

quite a *conceivable* world; quite a *conceivable* system which may govern agricultural production, for the time being at any rate. Do not let us assume, because we are unfamiliar with it or because we do not like it, that it cannot exist, or that there is something about it intrinsically unstable. It exists already. In these terms there is, broadly speaking, equilibrium to-day. It is the new world in which we find ourselves, and I suggest it is the foundation on which we shall have to build in the future.

The transcendent problem that faces us to-day, particularly as regards world agriculture, is the problem of how we are to effect the transition from a situation so complicated, so largely the product of an unprecedented depression and so widely governed by emergency remedies, to one in which the world can again enjoy the benefit of a freer and more fruitful commercial intercourse between nations. If this is to be achieved it will certainly raise problems of economic statesmanship of great magnitude and complexity. Their solution cannot in any event be easy. It will require not only a precise knowledge of the facts, but, if we are to make any substantial progress towards this objective, it will require, no less, a great deal of wisdom and a great deal of patience.

A. B. LEWIS, *University of Nanking, China.*

Having had the privilege of living in China for three years I should like to state that one should not mention the world depression as though it were a unified force which covered all of the important countries of the world and affected them all at the same time and in an equal degree.

In China the currency in 1931 was based upon silver and had been based upon silver for many years. By that I mean that the paper currency was redeemable in a fixed amount of silver. For more than two decades the value of silver had gradually been declining and consequently the general level of prices in China had gradually been rising. In 1931 this trend was reversed and the value of silver, as expressed in terms of other commodities, began to rise in all parts of the world. With this rise in the value of silver, commodity prices in China consequently declined.

The fall in prices, which began in 1931 in China, was confined to China and to Hong Kong, the two countries which were on the silver standard, but the rise in the value of silver in terms of other commodities was world-wide. Therefore it is perfectly clear that the fall in prices in China was a consequence of China being on the silver standard and of Chinese money being redeemable in terms of silver.

With the fall in commodity prices in China an agricultural depression appeared, just as an agricultural depression appeared in the rest of the world when prices began to decline in 1929. This depression in Chinese agriculture had become very severe by 1933, and continued in 1934; and as a consequence of this fact Chinese agriculturists, farmers, and others advocated the prevention of the imports of agricultural commodities into China. Ordinarily we hear of attempts by nations whose wages are high to keep out the products of countries whose wage level is low. In China we had the spectacle of the Chinese farmer trying his best to keep out, as we might say, the products of the cheap American labour. The depression in China resulted in such a degree of industrial distress that by 1934 the currency system, in which lay the cause of the depression, was wellnigh broken down. Beginning on October 15, measures were begun which were carried on through a whole year and which finally resulted in the cheapening of the currency. Judging by price relationships, agricultural conditions in China will probably be better in the next few years than they have been in recent years.

This use of China as an immense guinea-pig upon which we can observe the effects of changes in currency value, which are different from changes in currency value taking place in other parts of the world in time and in intensity, seems to me to provide us with opportunities to see where the fundamental cause of the situation lies. We can see that the protection which each country has tried to give to its own industries is only a result of the fundamental difficulty which lies in the change in the value of the currency. The difference in the currency is the only fundamental difference that I have been able to discover between the Chinese economic system and that in other countries. The fact that differences between the Chinese and other depressions have corresponded to differences in time and in intensity of changes in the value of the currency seems to me significant.

D. A. E. HARKNESS, *Ministry of Agriculture, Northern Ireland.*

It gives me very particular pleasure to have the privilege of speaking on Professor Scott's paper. The pleasure which members of this Conference must have had in listening to Professor Scott's scholarly address was very considerably greater for a number of old Glasgow men who are present and who were Professor Scott's old students. Professor Scott's paper is one which those who studied under him would have expected from him. It opened up many avenues of thought which Professor Scott did not pursue himself,

but which were left open for other speakers at the Conference to attempt to develop. That must be my excuse for the line on which I wish to say a few words, because I want to speak more from the point of view of agriculture and the community than upon agriculture and industry, and to speak of the problem more from the administrative than from the purely economic point of view. And in passing, I may mention that although Professor Scott himself has not developed this aspect of his subject to the same extent as he has developed the question of the relationship between agriculture and industry, there is no one better qualified to do so than he, especially in view of the experience which he has had as a member of the Committee of Investigation charged with the investigation of complaints against the operation of agricultural marketing schemes in this country.

We in this country, and I think that representatives of all overseas countries will agree that they are in the same position, have not been content to leave agricultural revival to depend upon the effect of cheap food production in providing the motive power for trade recovery and the consequent revival of agriculture through an improvement in trade conditions—the normal operation of the trade cycle which Professor Scott described in one part of his paper. We have all deliberately set out to secure a reduction in that premium of manufactures over agricultural products which at present prevails—a course of action for which Professor Scott indicated there appears to be a *prima facie* case. But Professor Scott went on to emphasize the care which must be exercised in securing a modification of the supply position between industrial and agricultural products. It is just here that the administrative problem in its most acute form arises. In most countries the steps which have been taken to secure readjustment have been as a result of direct State action, and thus it has been necessary for the State to step in with the object not alone of assisting the agricultural community but also of securing that this assistance does not go beyond limits which are compatible with the interests of the community and of consumers in particular. In this country one of the main measures of direct State assistance has been in the form of tariffs where there is the protection of the Import Duties Advisory Committee which exists to consider specific applications put forward not only on behalf of the agricultural community but also on behalf of industry generally. All tariff assistance given to agriculture must pass the scrutiny and criticism of that body. In the Wheat Act, and to a similar extent in the Sugar Act, where direct assistance has been given to industry by financial grants, there has

been a specific limitation imposed so that that assistance will not result in an excess of production beyond the level which it is desired to achieve. Again, in the policy of quantitative regulation which has claimed a very prominent part in revival of agriculture in this country, the question of the degree of quantitative control is a matter which is the constant concern of a statutory body created under the Act of 1933, the Market Supply Committee, while the Board of Trade, the department responsible for the issue of orders regulating the quantities of produce to be imported from abroad, is directly charged by the Act of 1933 to have regard to the interests of consumers.

There is perhaps one field of Government action which has been purely departmental and which has not come constantly under the supervision of Parliament, and that has been the action of the agricultural departments in securing voluntary limitation of imports from abroad. These voluntary arrangements have not been effected under the Agricultural Marketing Act, but rather have been effected with the threat of action under that Act if they are not accepted voluntarily by foreign countries. Consequently, in the opinion of some people, these voluntary arrangements have been adopted rather than the issue of a statutory order with the object of allowing greater latitude in negotiations than is possible when they are brought specifically within the scope of an order under the Act of 1933. But in all these spheres where assistance has been given to the agricultural industry, Parliament has been careful to keep control, and that control has not been in any way remote.

The position, however, is considerably different when we come to the marketing schemes under the Act of 1931. That Act in this country was an enabling measure, and all that it was possible for Parliament to do was to provide that complaints in regard to the operation of these schemes should be made the subject of reference to a Committee of Investigation, or the subject of investigation by a Consumers' Committee where the interests of consumers were specifically concerned. But in the operation of the marketing schemes what has in effect arisen has been the creation of bodies which have sales monopolies so far as agricultural produce in the United Kingdom is concerned. I had to refer recently to Marshall's *Principles*, and that is the reason for the appearance of this tome in my hand—and on the part of one who for more than twelve years has been away from pure economics I hope that that reference may be regarded as evidence of the fact that good habits sometimes stick as well as bad. I found in Marshall's discussion of the theory of monopolies this statement:

'The monopolist would lose all his monopoly revenue if he produced for sale an amount so great that its supply price was equal to its demand price: the amount which gives the maximum monopoly revenue is always considerably less than that. It may therefore appear as though the amount produced under a monopoly is always less and its price to the consumer always higher than if there were no monopoly. But this is not the case. For when the production is all in the hands of one person or company, the total expenses involved are generally less than would have to be incurred if the same aggregate production were distributed among a multitude of comparatively small rival producers. They would have to struggle with one another for the attention of consumers, and would necessarily spend in the aggregate a great deal more on advertising in all its various forms than a single firm would; and they would be less able to avail themselves of the many various economies which result from production on a large scale. In particular they could not afford to spend as much on improving methods of production and the machinery used in it, as a single large firm which knew that it was certain itself to reap the whole benefit of any advance it made.'

That was Marshall's discussion of the position probably thirty or forty years ago, and in our creation of these marketing organizations for agricultural produce it seems that we have created organizations which have a monopoly of sales but which have not a monopoly of production, and that consequently, unless there are adequate safeguards, marketing schemes may inevitably lead to the result that prices may be fixed at a level higher than the price which is necessary to equate supply and demand, but that the corresponding economies which in industry are secured by the monopolistic entrepreneur will not be secured in the case of agriculture because production will still continue to be in isolated units. The tendency indeed will rather be that the marketing board will fix its price at a level which is higher than the normal supply-demand ratio would justify, not simply in order to secure the maximum monopoly revenue as in the case of a monopoly operating in industry, but so as to secure that the less efficient producer in agriculture will continue to operate and continue to be able to sell his produce at a profit. And it is there, as Professor Scott has indicated, that probably the main problem which is confronting us with regard to the operation of marketing schemes and other methods of assisting the agricultural industry is to be found.

We have created the conditions of monopolistic sale, but in order to justify those conditions it is going to be essential that the industry should be able to show by the reorganization which is the justification for marketing schemes that costs of production have been

lowered and that agriculture is offering to the consumer a service which is performed at the lowest possible cost. But it is not sufficient to demand of agriculture that its unit costs of production should be lowered. It is also necessary to secure that agricultural produce is transferred to the distributor at as low a price as possible and that the distributor on his part will ensure that there is no excessive charge laid upon the consumer and equally upon the agriculturalist in the transfer of agricultural produce from the producer to the consumer. Only if agriculturalists have the assurance that this complementary stage of reorganization is going to take place, can we legitimately demand that agriculturalists sacrifice any of the advantages which they have at present gained in order to secure that the price to the consumer is reduced.

DR. W. R. SCOTT. *In reply to the preceding discussion.*

I wish first of all to thank the Conference for the very kind way they have received what must have seemed to be rather nebulous ideas. I thought perhaps the best thing I could do would be to suggest rather than to be dogmatic. Arising out of what has been said, I think the difference between Mr. Enfield and myself, in so far as there is a difference, is that he was regarding the position as to what had actually happened and then deduced from that the tendency of the near future. On the other hand, I was trying to find out in what direction, as far as lies within our power, we ought to endeavour to direct our efforts—a rather different thing. I don't think I should quite agree with his analysis, because it seems to me that if one follows it out, on his assumption, say, for a period of ten or fifteen years, some of the results are likely to be rather extraordinary and disquieting. For one thing the protective character of the crisis as a determining policy means simply, as it seems to me, a crystallization of panic conditions—in itself undesirable—and further of the hard things said of agriculture, for example, that it is to be the poor relation of an industrial world, for whom nobody has a welcome and who always wants more—while now a further name has been applied, namely, that of being a permanent pensioner on industry. Well, that I think conforms with the concluding words of what I said. It is not likely to be a happy state either for industry or agriculture, and further, if the conditions which he envisaged are the true picture, the vested interests are not going to stay where they are. This, in turn, is going to increase and increase, and that will produce very disquieting conditions which one can easily imagine.

I fancy that in this lies the basis of what Dr. Lewis said with regard

to currency in China, namely, that there is one rule that if the world is in a state of fear about its international relations, in other words, if peace cannot be counted upon, then we have a situation which is deteriorating and we get back into the old Mercantilist difficulty where it is a question of fighting for markets, not fighting by ordinary commercial competition, but by actual warlike methods. That is an alternative which I do not think is necessary and which I think is most distressing to contemplate.

I am glad that the question of the Marketing Acts in England and Scotland was touched on by a very favourite pupil, Mr. Harkness, because in so much as I have to deal with these in a quasi-judicial position I have felt myself precluded from mentioning them. Mr. Harkness has done it extraordinarily adequately.

Finally, I wish to introduce one point, and as it is in the nature of exploding a slight bomb on the Conference I must explode it somewhat delicately, for the sake of the nerves of one of our members, who, I believe, has just travelled by plane from Madrid. We all learnt in our youth that economics was a science. I am beginning to think in these very strange days in which we live that it is much more of an art in so far as there is not time for exact scientific procedure. But we do want the person scientifically trained, and then if he has the 'touch', the inspiration, he may see more than he can prove at the moment, but he can confirm it afterwards by verification from the manner in which things are moving. Of course, the danger of it, just as in art proper, in cubism, and any other sort of artistic 'ism', is that any one thinks he can draw just as good a picture as the person who has spent his life at it. So in economics the plain man believes that without any training he can solve all economic difficulties. Nevertheless, the new technique—however we may express it, 'touch', inspiration, divination—in economic affairs is going to be very important. It may be that the economic investigator may have to assume something of the mantle and, we hope, the inspiration of the prophet.

CARL E. LADD,¹ *Cornell University, New York State.*

Through the centuries, governments have recognized the necessity for maintaining the productivity of land and the activity and main welfare of rural people and rural institutions. There are three reasons for this. The agricultural regions produce food and fibre to feed and clothe all the people; they produce a surplus of young

¹ The special title of Dr. Ladd's address was 'What should a Government do for Agriculture?'

folks to maintain and increase the population of cities; and rural people themselves constitute a considerable percentage of the total population of any nation.

In periods of prosperity, governments in their agricultural policies are chiefly concerned with stimulating production. Labour, in its eternal struggle to better its standard of living and the welfare of city workers, is concerned with the cost of food. Through research and teaching, governments can increase food production and cheapen the cost. But in periods of general business depression, governments become acutely aware of the farm situation and pass many laws, some wise and many unwise. In such times farm distress always assumes great proportions and becomes a major part of the national problem.

The reason for this is clear. Business depressions always accompany a rapidly falling price level. Since farmers have a slower business turnover than any other major business, then on a falling market they must suffer greater losses between the time of making an investment in seed, labour, and fertilizer and the time of selling their product. Moreover, the farmer has many overhead costs, such as taxes and interest on investment, which remain frozen at high levels in spite of the rapidly falling prices of his products. As farming becomes more modern, more industrialized, and more efficient, it is inevitable that it shall suffer more from business depressions.

Obviously, the most important problem is to determine the causes of business depressions and take the necessary steps to lessen their severity or prevent them altogether. This is not only of tremendous importance to agriculture and city business, but it is probably the only protection against successive overturns of established governments, redistribution of capital by violence, and consequent loss of property, personal liberty, and happiness in the future. Only the strongest governments will be able to survive the next major depression without great change in form.

Apparently, society has not yet enough intelligence to solve this problem, so in the discussion to-day it is assumed that the world in the future, as in the past, will suffer periods of severe business depressions about four to six times in a century and that between these periods the price level and business activity will fluctuate from year to year in a relatively small degree.

Continuously, whether we are in a period of prosperity or depression, the government should do certain things for agriculture. Certain regulatory enactments must be made in the interests of farmers and consumers to protect the quality of products. Protection against diseases and destructive insects must be provided by a government

in the public interest. This group of services we think of in general as protective and regulatory activities. Governments should and do provide agricultural education on several levels; through boys' and girls' club activities on the elementary level; through agricultural schools on the secondary level; through agricultural colleges; and in the field of adult education through agricultural advisers and extension teaching activities. These are largely in accord with government policies in general education but are supported more completely than general education in most countries in recognition of the basic nature of agriculture and its importance to the nation's welfare.

Research work in agriculture cannot be largely supported by the industry because of the small size of the separate independent units. Moreover, it is probable that 80 or 90 per cent. of the benefits of research are immediately passed on to the consumer. For these reasons governments support agricultural research.

Recognizing the value of co-operative action among farmers in lessening the cost of distribution and purchasing activities, governments give encouragement and protection to agricultural co-operation.

All of these government aids seem justified. More than that, probably no other expenditures of government have been so effective in producing new wealth, promoting higher standards of living, and improving the health, culture, and happiness of people who remain on the farm and people who leave the farm to replenish the cities.

Now for the past half-dozen years governments all over the world have been attempting to relieve the agricultural depression by many new and unusual laws. These have included regulation of amounts of production, fixing prices to consumers, and fixing prices to producers. Each of these acts has been characterized by highly centralized governmental control which placed the destinies of millions of producers in the hands of a small group of men. It may well be asked, does any nation have the master minds capable of planning the production limits of individual farmers or capable of fixing prices in such a way as to promote the welfare of farmer and consumer? We have stumbled headlong into a highly complex, modern, economic society, and are attempting to regulate forces that we do not understand before rising to our feet and supporting ourselves on a foundation of economic knowledge.

It seems to the speaker that the one thing proved by these attempts at production and price control in America, England, and other countries during the past five years is the utter futility and failure of the entire plan. For generations the business world has carried on with

prices and production controlled by a free play of economic forces. Occasionally, certain groups limit this free play of economic forces by securing unfair advantages of one sort or another. The correction for this is not to build up a balancing unfair advantage for another group but rather to remove the first unfair advantage.

It must, of course, be recognized that in time of great distress many emergency activities will be undertaken. As we begin to emerge from the period of distress, we should be very charitable in criticizing these emergency activities unless they have clearly hindered recovery. The real danger lies in the attempts of emergency activities to perpetuate themselves as permanent institutions and so clutter up our economic system with clumsy and unwise centralized control and uneconomic processes.

On the constructive side, a government might well initiate and support certain activities looking, not towards the control and regimentation of individual initiative, but towards the development of long-time governmental policies affecting agriculture.

1. Every nation needs a land policy. This policy should include three general steps: First, the land should be classified into two groups, those lands that should remain permanently under private management for farming purposes and those lands that should be removed from active farm operations. Second, a national policy should be formulated for the development of the areas to be farmed. This should include schools, roads, electricity, hospitals, health, and sanitation. Such a policy must take into account the fact that in many nations more than half of the people born on farms will ultimately live in the cities. Third, a policy should be formulated for the best use in the public interest of the lands classified as unsuited for farming. Some areas should be reforested, some areas should be grazed under a carefully controlled plan to prevent loss of usefulness. Because of mistakes of the past in many cases a policy must now actually include plans for restoration of ground cover, soil fertility, and water-holding capacity.

2. A nation should have a monetary policy. England, Sweden, and America seem to have demonstrated in varying degrees that changes in the gold content of their money can prevent too wide fluctuations in the general price level. This is a highly controversial topic at the present time, affected largely by whims, fancies, fetishes, and emotions of all sorts. A modern world ought to be able to study the facts in the situation, evaluate the scientific evidence available, and formulate a policy. Any plan that may prevent major business depressions is highly important to agriculture and to the nations.

3. A nation should greatly expand its agricultural research programme. Agricultural research is very young. In most countries the effectiveness of the work has only been demonstrated during the past quarter century. Money expended in this field brings greater returns to all society than any other government expenditure, unless it be that for teaching. One of the greatest needs is for much greater support and co-ordination of effort in all the branches of agricultural economics in all countries. Biological science must be balanced by economic and sociological science before the world receives the full amount of good out of any one of the three.

4. A nation should stimulate and aid agricultural co-operatives. The greatest danger in this field comes from a government-stimulated mushroom growth of co-operatives so poorly founded that they are doomed to die and reflect on the whole co-operative movement. Co-operation is a business and it is an emotional phenomenon. If either is entirely lacking, the effort does not attain full success. To-day in many nations there has developed a large fund of practical knowledge and scientific fact on the problems of co-operative business management, membership relations, and public relations which must be drawn upon fully if new activities are to be successful. Co-operation ordinarily suffers more from its over-zealous promoters than from its enemies.

In conclusion, as economists we should know our historical backgrounds. We should evaluate conditions in terms of their fundamental economic causes. We should see the present not as an isolated case but as one in a sequence of economic happenings. We should anticipate depressions and prepare for them. We should not be swept away from our economic moorings by unwise emergency measures. When emergency measures are adopted, they ought to be based on factual reasoning and recognized frankly as temporary, to be changed or abandoned as the emergency passes. We need to recognize frankly the great inadequacy of our economic research and the great lack of co-ordination between countries and build to correct this. We need in many countries to work towards a better national land policy, a modern monetary policy, an agricultural research programme, and sound progress in co-operative action.

BARON BELA MALCOMÉS, *Ministry of Agriculture, Budapest, Hungary.*

With your permission I shall endeavour to contribute towards an elucidation of the main ideas set forth in the paper read by the esteemed President of the Royal Economic Society.

Before I enter into a discussion of the subject, I should like to

make a general observation, namely, that, when one speaks of the relation of agriculture to industry, it would be a great error to regard the problem as one which, in all its aspects, is common to all countries. Agriculture itself is growing more and more industrial in character. Here in Great Britain agriculture is even called 'industry'. It follows that the relation of agriculture to industry in a country depends on the extent to which it has become industrialized. This, in turn, determines in what measure the relation of agriculture to the community may be considered the same as industry's relation to it, and in what measure—from the standpoint of agriculture—different. Before going further I must stress the point that, compared with other branches of production, agriculture has aspects affecting public interests to which priority must be given and which, even in a characteristically industrial country, must not be neglected, indeed must receive the greatest attention.

The Physiocrats of the eighteenth century, when mankind was at a more primitive stage than now, held that nature played the most important role in social economy. At the time agriculture was in its infancy. Chemistry and machinery had not yet been applied to it; the superiority of the human mind which has learned to harness the forces of nature was yet to come, and in conjunction with the physical energy used in agriculture natural forces were the greatest factors in agrarian production. At that time the merchant and craftsman were justified in saying: 'It's easy for the farmer. He sows and reaps, and nature does the rest. But the merchant and the craftsman must work and worry; nature has no gifts for them.'

Mental progress—discoveries, inventions and their application—and a more rational organization of labour have reduced the role played by the forces of nature as factors in production, and have transformed agriculture into something more like industry.

It cannot be denied that every commodity produced by man contains elements of matter, that is to say, natural elements, and elements of labour and mind. In agricultural products the percentage of the elements of matter is perhaps greater than in industrial products. Modern production, however, is characterized by a tendency to let mental work play the major role in every branch of production, as also in agriculture, and to force matter into taking a minor one. This creates a new basis of values. The development is accompanied—if only because of altered needs—by a profound change in supply and demand, in the distribution of income, and in the movements of the population. The latest developments in the evolution of international prices must also be viewed chiefly from this side. With

improvement in the production of raw materials, their prices have fallen so greatly that, coupled with higher wages, they have radically changed the proportions of the factors determining the prices of manufactured goods. This has led to an entire change in the relations of the factors of production to one another and in their individual importance.

Man's ability to extend his dominion over nature is almost boundless. That of course needs a word of explanation:

With the increase of the population the sum total of its needs grows correspondingly. Seeing, however, that the basic material of every necessity comes from the earth, the fertility of the soil is an important determining factor in industrial development, and as the fertility of the soil cannot be increased *ad infinitum*—i.e. it cannot be increased beyond certain limits without increasing the cost of production—it is indisputable that the soil is the relative and absolute regulator of industrial production.

Every area has a maximal capacity of production which determines how many people it can support. The soil of more densely populated areas must be more intensively and therefore more expensively cultivated, and so is unable to compete with areas more sparsely populated where intensity of cultivation is less.

But I have to point out that it is just the densely populated areas which are under the pressure of an increased demand for necessities, and are thus obliged to develop their industries, although the raw materials needed have to be produced at a higher cost. This disadvantage is noticeable in the exports from Europe to overseas countries. Europe is obliged not only to procure cheaper raw materials and foodstuffs from the overseas countries, but also to pay its industrial workers badly, in order to be able to compete with other continents. That is a menace to European agriculture, because it lowers the purchasing power of its consumers.

Human resourcefulness has two difficulties to contend with, the population and the soil, and in older areas where a dense population with its manifold needs lives on a more impoverished soil, industrial production and economic life in general require closer organization in order to fulfil their vocation. But besides organization and rationalization there is also a greater need of discoveries and inventions, for they alone are able to meet satisfactorily the difficulties mentioned, caused by over-population and an exhausted soil. Industry which strives to provide people with cheaper goods in greater abundance cannot do so without their aid. Discovery, by finding out forces of nature easily exploitable, furthers this aim;

inventions do so by giving us new means and methods of production. Discovery and invention have had to counteract the effects of the decreased fertility of the soil and of over-population. Modern industrial development would never have been possible without them.

Coupled with inventions, the organization of production and distribution has made it possible to supply increased demands at cheaper prices. The fifteenth century, with its geographical discoveries which opened up new natural resources, and the nineteenth and twentieth centuries, with their inventions, chiefly of a technical nature, and their new chemical processes, achieved a cheaper and more abundant production able to satisfy the demands of a growing population.

The discovery of new geographical areas acquired significance in political economy, not only because new tracts of arable land were added to the old, but also because they enriched international trade with hitherto unknown products, and on the one hand created new demands, and on the other made new inventions possible. By supplying new kinds of produce they created a demand for them. The old kinds lost in popularity and the demand for them, as well as the cost of their production, decreased. This explains why, in spite of an exceedingly great increase in the population, the prices of supplies kept on falling. The discovery of areas to be exploited by economic production has now long ceased, but a better exploitation of the areas acquired, new inventions, and the use of new processes continue steadily in our day. It was on this economic development that industrial capitalism thrived, the profits and competitive ability of which depended on the standard of life of its employees, that is to say, on the wages paid. It is therefore to be understood that every effort was made to ensure that the industrial workman should be able to buy the necessities of life, mostly of an agricultural origin, cheaply. To this end organized workmen joined forces with industrial capitalism, and the result of their joint agitation was the one-sided and false interpretation of the 'interests of the consumer' which were taken to mean the interests of the industrial worker or, in a wider sense, the interests of all the non-agricultural sections of the population. This interpretation is misleading, for the consumer is also a producer, and vice versa. The one-sided interests of the consumer should not be allowed to take priority, but efforts should be made to bring the interests of both into harmony.

So long as demand was greater than supply it was easier to understand the one-sided discrimination in favour of the interests of the consumer, but now when production has over-stepped the limits of

normal consumption, and the producer does not receive the protection calculated to insure the costs of production plus a fair profit, the time has of necessity arrived when the abuse of the title 'consumers' interests' must be stopped. It begins to be more widely recognized that the agricultural producer is also a consumer, the consumer of manufactured articles. In the very interests of industry, therefore, adequate prices must be insured to the agriculturist.

The increased capacity of production in our day on the one hand and the highly-developed system of trade aided by transportation on the other, the unequal distribution of income, the decreased purchasing power of consumption, and chiefly the one-sided protection of the consumers' interests, have brought a complete change in the free play of supply and demand which formerly kept the balance between production and consumption by means of a more or less steady process of adjustment. After the war this change led to the necessity of limiting the freedom of trade. Your own former Prime Minister, Mr. Ramsay MacDonald, explained the rightness of this tendency at the London Economic World Conference in 1933 as follows: 'No community can allow itself to be the victim of measures which, by doing away with the profits of the producer or by disturbing the costs of production, insure anti-economic advantages to the consumer.'

It was only recently through the experiences of the world economic crisis that people became generally aware that agriculture is one of the most important factors of economy, not only as a producer, but also as a consumer; that, alongside of a fair adjustment, consumption and production must be made to balance and brought into reciprocal action with the social interests. That this cannot be achieved if individualistic economic liberalism is rigidly adhered to is obvious.

These are the reasons which have led modern political economy to afford special protection to the basis of all economic life, agriculture. This protection is international, and though to-day it has not got beyond the stage of elementary measures it may shortly be expected to achieve results by a uniform regulation of the international trade in agricultural produce.

Agricultural production in itself may be an unprofitable occupation, but if linked up with the manufacture of its own raw products and their sale, the profits on the latter two will balance losses.

Industry compared with agriculture is in most cases simply a further stage of development, and the increasingly close connexion between the two finds expression more and more to-day in the fact that agriculture is beginning to take the marketing of

its own raw products and their manufacture into its own hands. Big estates have been doing this for some time, but the peasant farmers, who represent by far the greater part of agriculture, must first club together in co-operative societies before they can follow their example.

Njemetski in his essay 'Die Industrielisierung der Landwirtschaft' says: 'It is obvious that our times tend to make industry agricultural in character by eliminating the undesirable go-between, commerce, which makes the greatest profits with a minimum of labour, and by bringing agriculture into immediate touch with industry and handicrafts. When agriculture takes the industrial manufacture of its own products more largely into its own hands, a section of industry will cease to exist as an independent industrial power and will become a dependency of agriculture. A trend in this direction is manifest in present developments.'

The profitableness of agriculture depends as much on the intensity of farming and the use of technical inventions as on a development of co-operative societies perfect though they might be. The linking up of fully developed co-operative societies with the general central organizations of the agricultural co-operative societies increases their competitive ability and slowly transforms them into a concern resembling industry.

In Europe economy is still mainly agricultural in type. According to Reithinger, the scope of life in Europe, both from statistical and geographical points of view, is still mainly agricultural. Europe has a comparatively small industrial nucleus, a wide circle of handicraft industries, and almost purely agricultural peripheries. Not including Russia, it has an agrarian population of 140 millions, or 40 per cent. of its total population of 350 million souls. Another 40 per cent., or 140 millions, are engaged in handicrafts, commerce, trade, and administration, and only 70 millions, or 20 per cent., in industrial occupations. Four-fifths of that industrial stratum live compactly, partly in central and western Europe, while one-fifth is scattered in the frontier areas.

What the effect of increasing industrialization is likely to be on commerce in the old industrial states of Europe may be guessed from the fact that one-fifth of their industrial output finds markets in the agrarian and raw material countries, while only one-seventh is traded between the industrial countries themselves. But agrarian countries are now developing their industries, and the exportation of everyday finished articles will find itself in increasingly great difficulties. For this reason it would be an important task to raise the

purchasing power of the agrarian countries and make use of that added capacity to stimulate the consumption of those finished articles.

Economic life is developing along lines called 'the agriculturization of industry'. This means that, to further rationalization, industry seeks closer links with agriculture, and is organizing more and more on agricultural lines. By means of decentralization it approaches more easily the sources of raw materials, provides cheaper and more hygienic conditions for its workmen, and is able to supply the demands of the zone adjacent to a plant at lower prices and more directly. Parallel with this agricultural decentralization of industry runs the industrialization of agriculture.

To-day the majority of industries are, in fact, merely more highly developed forms of agriculture. Agriculture itself strives, when possible, to send its produce to market in a manufactured condition and be its own merchant, which means that its activity is also industrial and commercial. This development of agriculture is in keeping with the political and social interests of the State, for it prevents the spread of proletarianism, makes production cheaper, promotes the hygienic and material welfare of the population, and creates a better distribution of income which is not only a social interest, but also important to the State from a political and primarily from a financial point of view.

An interesting light is thrown on the relation of agriculture to industry by the points of view of land policy. It is well known that the growth of industry depends on the density of the population, and that the latter is affected by the average size of the landed estates. In Europe, on an average, there are 68 people to every square kilometre, in America 5·8, and in Australia 1·1; but in Europe itself the figures vary from 23 to 297 people per square kilometre. This circumstance alone does much to indicate that the right way is to achieve estates of different average sizes according to the density of the population in the different countries. The opinion is that some better prices for agricultural produce are to be obtained by creating peasant farms out of the big agricultural estates. It is said that the former provide industry with better opportunities of making money, and thus make an increase in the consumption of agricultural produce possible. As an argument against this, it must be said that the peasant farmer buys quite different kinds of industrial articles and does not count as a consumer to an important section of industry whose customers are the owners of large estates. Peasant farmers count as the consumers of industrial articles only in countries where they have been organized as suppliers of the markets and are an active

factor in trade, so that with more capital and a greater purchasing power, as well as higher cultural aspirations, they have become permanent mass-consumers of industrial articles.

The policy of exploitation pursued formerly in the colonies made the development of European industry particularly easy, which, in turn, was responsible for a great increase of the population. The colonies provided possibilities of disposing of surplus industrial products and the surplus of the population. Now we have an enormous surplus population in Europe and nowhere for it to go, and the colonies no longer represent markets with unlimited powers of absorbing European industrial articles. The problem of the requirements of food and raw material for the swollen population and industry of Europe remains, and its solution is a great cause of anxiety and worry.

The further growth of Europe's population and industries cannot be checked by artificial means; indeed it is quite certain that even in the present most adverse circumstances the rising tendency will continue, perhaps not so rapidly as hitherto. In the first place the European countries of an agrarian type will develop their industries in the near future.

On the wave of recovery following the first slump in prices after the war the prices of non-agricultural commodities rose much higher than those of agricultural produce. In the year 1929 capital invested in non-agricultural enterprises brought two and a half times as much income as that invested in agriculture. Urban industries prospered, agriculture fell back, but it grew evident that, when industry bought agricultural produce under cost price, it was doing itself an injury.

The industrialization of agriculture and the growth of industry affects social improvement and therewith the interests of the community. Evolution in the world economy cannot be checked, for its foundation is man himself and his economic needs. The human race is on the increase, the increase is rapid, and therefore economic needs are steadily growing too.

The distribution of the population is constantly changing, with production developing along horizontal and vertical lines to meet the growing demands. The change in the lines of consumption has been particularly great since the Great War and manifests itself in different ways according to the level of civilization and the occupations involved. With the growth of civilization the percentage of food consumption sinks and the amount of money spent on cultural needs, clothes, soap, books, theatres, wireless, &c., is more. The migration

of the rural population to the cities with an accompanying change of occupations also contributes largely to a change in the lines of consumption. This affects the power of the markets to absorb primary articles, for when the new demands have been satisfied the means left to satisfy the old will be less.

Regarding the special position of agriculture, Adam Smith himself recognized, and more than once pointed out in his works, that too much attention had been devoted to the development of cities and too little to the villages. To-day, after the lapse of so many years, the situation is substantially the same. The antagonism between city and village is still one of the chief economic problems. It would seem as though industrial centralization were developing towards decentralization, not only in its international aspects, but also within the framework of the different countries. Day by day the desire to reconcile civilization with a more natural way of living finds expression in the phenomena of individual and social life.

The quality of agriculture as a prop of national existence and the conserver of energy and morals and the cosmopolitan nature of industry and commerce as a factor in the progress of civilization being equally important to nations and mankind as a whole, the aim of national economy must be to harmonize the different branches of production and preserve equilibrium between them. Another aim is to see that while progress in economic development and the spread of civilization are assured, economic production is organized so that a comparatively large part of the forces of production are tied down in agriculture. In the long run, the end would be that enterprises closely connected with agriculture would, thanks to their mixed type, partly agricultural, partly industrial, themselves guarantee the development and equilibrium of the different branches of production.

Even before the Great War it was a generally known fact that agriculture was being neglected in favour of industry. Although the level of agriculture had risen, it was not in the position required to insure a proper equilibrium between the two branches of production. Industrial production had very largely increased at the expense of agriculture which supplied primary necessities. Besides the industrial production on a grand scale which supplied the demands of civilized man, there was a considerable production going on of trashy goods of no cultural or artistic value. It is evident that industries which satisfy needs created artificially and a consumption led into unnatural paths cannot be kept up in our day. A system of production at variance with the real needs of civilization, natural requirements, social points of view, and public hygiene cannot survive,

nor can a system prosper which is totally unproductive as far as civilization and the great aims of the human race are concerned. Economy must be imbued with the spirit of national thrift. An optimum in national economy can only be achieved by placing the whole system of economy under a single directive guidance. The commodities required to supply the need of a popular standard of life must be produced by the most thrifty use of the energies and means at our disposal.

When on nearing conclusion I say that the relation of agriculture to industry is growing closer and closer, and that both as regards production and marketing their interests are becoming more interdependent, I must not fail to emphasize the point that agriculture to-day is in a particularly critical condition owing to the great changes and oscillations in production and consumption. For this reason it must be accorded very effective support as the basis of all economic production. But let us never lose sight of the principle that a solution of the economic problems must be sought in the creation of equilibrium between the branches of production. Such an equilibrium would serve public interests in the widest sense. Agriculture is of special importance to the community as the source of popular energy and from the points of view of the preservation and regeneration of the race, the moral education of the folk, and, last but not least, national defence. When, therefore, a measure of priority is given to agrarian policy it is certainly justified, if not from economic, at any rate from political standpoints.

In conclusion let me venture to give a little practical advice. Capital invested in agriculture circulates more slowly and therefore bears a lower interest. By linking agriculture to technical industries the profits of the capital sunk in the former will surely be larger. But transactions of that sort require a knowledge of finance and commerce, as well as experience. We seek for these qualities in most farmers in vain. Their attempts to industrialize agriculture very often land them in debt. In spite of the imperative demands of modern times for industrialization, I cannot be too emphatic in advising farmers to use the greatest caution and thrift.

Let us develop and modernize agriculture by all means, but we must remember that it cannot be made entirely independent of nature and the soil. It cannot, therefore, obey the laws governing industry in everything. And let us not forget that because its dependent position makes its profits smaller and because its very conservatism serves the interests of the community, it is entitled to expect the State to discriminate in its favour.

JOSEF KNESPL, *Agricultural Institute of Farm Management, Prague, Czechoslovakia.*

The relation of agriculture and industry as the two main components of production is one of the most important features which characterize the economic structure of a country. The relationship of agriculture to the whole community shows how great an importance is attached to agriculture in a country. It also shows to what extent a country is endowed with those advantages which are characterized by agricultural production.

As a rule, in individual countries the relations between agriculture and industry developed organically over periods of several decades, often over whole centuries, according to the natural conditions and the volume of home agricultural production on the one hand and the possibilities of imports from abroad on the other hand. The development in Czechoslovakia took quite a different course. Until the end of the World War, conditions in Czechoslovakia as part of Austria-Hungary developed organically. After the sudden dissolution of Austria-Hungary, Czechoslovakia obtained, according to Dr. Brdlik,¹ only one-fifth (20·7 per cent.) of the territory of the former empire, but a full quarter of the population (26·4 per cent.) and two-thirds of all industries. In the old Austrian State, the farming population formed the majority with 55 per cent. of the population, but in Czechoslovakia it dropped to a minority of only 40 per cent. The farmers in Czechoslovakia, therefore, were faced with the duty of providing food for twice as many people as had been the case in the former Austro-Hungarian State. In Czechoslovakia the industries are to a far greater degree dependent upon export of their produce and import of their raw materials than formerly in Austria-Hungary.

An outward sign of the relationship between agriculture and industry is the numerical ratio of persons working in these branches of production. In Czechoslovakia, the ratio of agricultural population to industrial population was in 1910, 3·0 to 2·2; in 1921, 2·4 to 2·2; but in 1930 was 1·7 to 2·5. We can therefore draw the conclusion that the agricultural section of the population is steadily declining in Czechoslovakia, whilst the industrial population is increasing. Thus, Czechoslovakia is an agrarian-industrial State.

The most characteristic economic key to the relation of agriculture to industry in Czechoslovakia is the price index for agriculture, which

¹ Dr. Vlad. Brdlik, *The Agrarian Crisis and the Agricultural Import Tariffs*. Prague, 1926.

is compiled for the province of Bohemia by the Agricultural Institute of Accounting and Farm Management of CSR in Prague (Table I). In these indices the prices of all agricultural products and agricultural requisites are weighted in accordance with the actual sales

TABLE I. *Index of currency, index of prices in agriculture, discrepancy and purchasing power, compared with pre-war level.*

Year	Currency index 1913 = 100	Price indices Prices 1913/14 = 100		Discrepancy between the prices of agric. requisites and agric. products	Purchasing power compared with pre-war level	
		Agric. prices	Agric. requisites		of agric. produce for buying requisites in per cent.	of requisites for buying agric. produce in per cent.
1921	1,636	1,274	1,184	-90	108	93
1922	897	997	1,036	+99	91	110
1923	686	809	906	+97	89	112
1924	685	884	875	-9	101	99
1925	683	889	897	+8	99	101
1926	684	781	903	+122	86	116
1927	684	853	934	+81	91	109
1928	684	815	949	+134	86	116
1929	684	766	944	+178	81	123
1930	684	658	903	+245	73	137
1931	684	589	857	+268	69	146
1932	684	510	829	+319	62	163
1933	684	496	785	+289	63	158
1934	803	511	762	+251	67	149
1935	821	580	779	+198	75	134
1936	821	601	778	+177	77	129

and purchases¹ and expressed in relation to a pre-war standard. The farming expenses of agriculture are mainly composed of products of industry and trade.

According to these indices, from 1927 to 1933 the prices of agricultural products dropped from 8.5 to 5 times pre-war level, i.e. by 42 per cent., whereas in the same period the prices of agricultural requisites dropped from 9.3 to 7.9, i.e. only by 16 per cent. The currency index was in this period 684. The greatest discrepancy between the prices of requisites and of agricultural products existed in the year 1932, when the farmer obtained scarcely three-fifths of the amount of agricultural requisites that he had received before the war; in the year 1932 farmers bought their requisites at 63 per cent.

¹ The detailed composition of the index is shown in *Reports of the Agricultural Institute of Accounting and Farm Management of CSR*, Year V, No. 4.

higher prices than they obtained for their products (compared with pre-war period).

In face of this pronounced and prolonged discrepancy it is easily understood how the debts of the farmers grew to an alarming extent.

Naturally, the economic policy of the State considerably influences the relation of agriculture both to industry and to the whole community, either by means of direct support of one or another branch of production, or by encouraging consumption, by facilitating exports or control of imports, as well as by various measures designed to influence prices.

It can very well be said that, up to the world crisis of the last period, the main instrument of State price policy was *tariff policy*, which thus came to be an important regulative factor in the relations between agriculture and industry. This also holds good for Czechoslovakia. In Czechoslovakia, from the very outset, the relations of agriculture to industry suffered because, after the World War at a period of general scarcity and high prices, a considerable amount of agricultural imports free of tariff duties had become necessary; in contrast, the tariff duties of industrial products were raised to 20 and 30 times pre-war level. At a later date (1926), with an increasing agricultural output, the influence of world competition made itself fully felt on the Czechoslovakian market and led to the collapse of prices of agricultural products; tariff protection for agricultural produce could only gradually be raised and never reached the level of industrial tariffs.

In the year 1930, when the index of Czechoslovakian currency was 684 compared with pre-war level (now 821), the more important agricultural products enjoyed tariff protection equalling 3 to 12 times pre-war level, but the tariffs of industrial commodities were 10 to 28 times pre-war standard.

The previously mentioned discrepancy of prices, however, was caused not only by difference in tariff protection for agricultural and industrial goods, but also by the social reforms such as shortened hours of work and increasing wages up till 1929, heavy contributions for sickness insurance, and particularly since 1926 high subscriptions for old age and invalid pensions, which on the one side increased the costs of industrial production and on the other hand burdened the wage bill, so that compensation was achieved through cheaper agricultural products, i.e. cheaper raw materials for the industries and cheaper food for the workers. Thus we find the anomaly that the social advantages of the industrial workers are, by means of cheapened food, mainly borne by agriculture and not by the industries.

New measures of economic policy designed to check the collapse of prices for agricultural products (import quotas, export premiums, syndicates, organizations for the purchase of produce, particularly grain) could be introduced only with the greatest difficulties and mostly only with great delay in Czechoslovakia because of the desire to protect as far as possible the working classes, the industries, trades, and the great army of public employees from the effects of the spreading crisis, in view of the political atmosphere prevailing. Prices for agricultural produce only gradually recovered; the index rose from 500 in 1933 to 600 in 1936, a recovery of 20 per cent. The comparatively small drop in prices for agricultural requisites was a result of the rigid collective rates (wages and cartels in the industries).

Another fact also proves the more favourable conditions and better business conditions of industry as compared with agriculture, namely, that the high industrial wages attracted many comparatively poorly paid agricultural workers. In the year 1925 wages were for agricultural workers 7.53 times pre-war level, for industrial workers 9.07; in the year 1930, for agricultural workers 7.76, for industrial workers 10.16; in the year 1935, for agricultural workers 6.55, for industrial workers 9.86.

The actual sales of industrial goods to agriculture decreased far more than is indicated by the decline of the purchasing power of agricultural products for industrial commodities, for the growing interest charges for agricultural debts, the unchanged expenditure for taxes and social insurance of the workers, and the cost of insurances permitted of no new investments, and only the most urgent works of upkeep could be carried out.

The agrarian crisis which originated in other countries and which began in 1928 and reached its climax in the years 1932 and 1933 (Table I) was therefore the precursor and the main cause of the industrial crisis which, after the boom of the year 1929, commenced in 1930 and reached its peak in 1933.

In Czechoslovakia, as elsewhere, a prosperous state of affairs in agriculture, therefore, is the most reliable basis of good permanent markets, independent of foreign disturbances. Thanks to the land reform, Czechoslovakian agriculture represents a wide market for industrial goods, for 95½ per cent. of all holdings are operated by independent, completely free owners of small and medium-sized farms under 20 ha. in size. These farms claim 68.5 per cent. of all farm land, whereas the group of farms over 100 ha. in size only number 0.6 per cent. of all farms and operate 13.9 per cent. of the

land. As Dr. Vlad. Brdlik¹ has proved for Czechoslovakia, the small farmers, with their high capital investments in buildings and machinery per ha. of farm land, with the greatest number of persons working per unit of land (mainly members of the family), are better buyers of industrial commodities than the great estates with comparatively poor workers.

In the same way as the industries must have a keen interest in a flourishing agriculture and in unimpaired purchasing power of the rural population for industrial goods, so must agriculture also be keenly interested, in view of the marketing of its produce at favourable prices, in a fully employed industry and in an elastic price policy (which was not the case), and must realize the unfavourable effects of industrial unemployment.

The attitude of agriculture towards industry can, therefore, not be hostile, as both branches of production offer to each other the possibilities of economic prosperity, quite apart from the fact that agriculture is the source of a healthy industrial population in good times and the basis of a more favourable standard of living, also for the industrial population, in times of stress. But it is unwarrantable that one branch of production should live solely at the expense of the other. Optimal collaboration can only be attained by mutually adjusted prices and full employment. This offers the greatest advantages to both sides. Even then, times of prosperity will alternate with leaner times, but the problem is to check the swing of the pendulum.

The present crisis, accompanied by a systematic policy of self-sufficiency in most countries, by barter trade between many States, and by restricted food imports owing to high harvests in the importing countries in recent years, has clearly demonstrated the instability of any economic policy that is solely based on the export markets. In Czechoslovakia, the former very substantial imports of wheat and maize have almost completely disappeared because of higher home production due to greater yields and increased acreage, whilst Czechoslovakia has lost its foreign markets for malting barley and, partly, for sugar. The Czechoslovakian industries dependent upon exports have thereby lost a part of their compensations. This was the more so, because fat consumption which depended on free imports (without compensations) shifted to the import of tropical vegetable fats used for margarine. Imports of raw materials have been doubled since 1927.

Also in the present difficult period of restricted foreign trade,

¹ Dr. Vlad. Brdlik, 'The Economic and Sociological Basis of Land Reform in Czechoslovakia', in the periodical *Zemědělský Archiv*, Prague, 1919-32.

alleviation can be found, particularly, as Dr. Brdlik has proved, in the fat question.¹ The unfavourable situation of Czechoslovakian agriculture is not a result of over-production which is non-existent.

Even with the high yields of recent years (e.g. 1933), Czechoslovakian agriculture is not entirely self-sufficient; if we calculate the acreage necessary for the production of the imports and exports of Czechoslovakia as far as they can be grown there (excepting cotton and wool), 12 per cent. of land is lacking for supplying home requirements. The greatest part of the acreage would have to be devoted to supply the imported fats and raw material for this end. By restriction of imports, partly to be replaced by home production, the marketing problem of Czechoslovakian agriculture could not only easily be solved, but there would remain a considerable surplus as barter for the import of lard and non-tropical fat raw materials. However, the future of the industries must not rely solely on agricultural barter for industrial exports. In price policy and in imports, the system of equal rights, of mutual advantages, and mutual compromise, must be sought.

The right relation of agriculture to the industries forms the base of prosperity of both groups, and the prosperity of both is the surest guarantee of the welfare of all citizens of the State, for the national income of a country like Czechoslovakia can only be derived from production.

Turning now to the relations of agriculture to the whole community, it is the duty of agriculture to supply the community with sufficient food supplies at reasonable prices, and it is the duty of the community to support home agriculture as the source of its food supplies, to grant the necessary protection against unsound foreign competition, and to allow of prices in accordance with home conditions of production.

Concerning the prices of agricultural products in the economic life of Czechoslovakia, there can be no doubt that they are still very low and not sufficient compared with the prices of agricultural requisites. This is proved by the price indices in Table I and by the indices of the State Office of Statistics concerning the cost of living of workers' families in towns. Whilst on the average of the year 1935 farmers only received 5.80 times pre-war prices for their produce, the expenses of a workers' family were: for food 7.79, for rent 6.89, for clothes and shoes 6.80, for various other necessities 7.89 times pre-war level.

¹ *Vide* the periodical *Zemelska jednota*, 15 Apr. 1934, article by Professor Dr. Vlad. Brdlik.

The low prices for agricultural products are caused by the poor prices for live-stock produce, for which in 1935 the index was 5.15 as compared with an index of 6.52 times pre-war level for plant produce. The low prices for live-stock products are due to the price of beef

TABLE II. *Home-Production, Consumption, Surplus and Deficiency of home production of some agricultural commodities in Czechoslovakia on the average of the years 1930/31 to 1934/35.*

Commodity	Production	Consumption	Surplus		Deficiency	
			Quantity	in per cent. of production	Quantity	in per cent. of consumption
	'000 truckloads	'000 truckloads	'000 truckloads	%	'000 truckloads	%
Wheat . .	146	177	..	..	31	17.6
Rye . .	179	184	..	..	5	2.7
Wheat and Rye	325	362	..	..	36	10.0
Barley . .	124	102	21	17.2	..	..
Oats . .	139	134	5	3.4	..	..
Maize . .	24	56	..	..	32	57.3
Potatoes .	915	915	..	..	0.6	0.1
Sugar . .	75	40	35	46.5	..	..
Hops . .	1	0.3	0.7	72.4	..	..
Beer, (in hl.) .	9,459	9,332	127	1.3	..	..
Meat, fat, and						
bacon . .	44	50	..	..	5	10.5
Butter . .	7	7	..	..	0.09	1.3
Timber . .	1,093	1,001	92	8.4	..	..

and dairy produce. The main reasons are the complete lack of import duties for the fat raw materials and the very slight tariff protection for lard and heavy pigs. These are the commodities chiefly imported into Czechoslovakia. At the end of the year 1935 the import duty for lard was 90 Kč. per 100 kg., i.e. twice the pre-war duty, the duty for heavy pigs was 80 Kč. per 100 kg., i.e. 5 times the pre-war rate.

The exceptional importance of agricultural production for the whole community was proved during the World War and in the present restless times. Agriculture ought to provide sufficient food for the general public even when food imports are endangered. Czechoslovakian agriculture fulfils its duty, as can be gathered from the average of the years 1930 to 1935 (Table II).

In the period 1930 to 1934, in the case of cereals (wheat and rye) 10 per cent. of the requirements for home demand were lacking, but in the last two years production of cereals exceeded demand, so that for the year 1937 a reduction of the wheat acreage will be decreed. The

import of 30,000 truckloads of maize is balanced on the average by the export of 26,000 truckloads of oats and barley. Respecting potatoes, self-sufficiency is attained, apart from an insignificant amount of early potatoes. Sugar production is 47 per cent. dependent on exports, hops almost three-quarters. Exports of timber amount to about one-tenth of the annual production. Self-sufficiency is reached in beef, light pigs, poultry and eggs, but 10 per cent. of fats are wanting, and, of course, the greater part of the fibres and wool needed must be imported.

Agriculture, however, is not only the source of the food supplies of the whole nation, but it represents, with its conservative spirit, its sane views of life, and with the nature of its production, an unchanging basis—the soil—a free element of health, humble-mindedness, thrift and content, without tendencies of expansion. And it is thus an important force, working towards the understanding amongst the nations and towards the peace of the world.

J. F. DUNCAN, *Scottish Farm Servants' Union*.

I am going to give you what I hope is the reaction of an ordinary practical agriculturalist to the discussion we have had to-day on the relation of agriculture and industry as seen by the pure economist and by some of those who have been speaking. The feeling I had in listening to Professor Scott in the morning was that his analysis from 1913 did not carry us far enough back because, from his own statement, for sixty years past, with the short interval of the war years, the exchange of agricultural products against industrial products had been to the disadvantage of agriculture. Now I am not enough of a statistician, and I have not enough belief in the statisticians, to be able to say whether that is correct or not. But we do know that, during that period at any rate, most agriculturalists had complained of serious times and depression. It does seem to me, therefore, that we cannot explain the relation of industry and agriculture merely in terms of the very disturbed time that we have had since the year 1913.

If we are to examine the question, we have to go deeper into it than that. I suggest that a lead will be found in another of the statements of Professor Scott, when he assumes the free play of economic forces. Dr. Ladd also assumed more or less the free play of economic forces. I am going to suggest that the free play of economic forces has never been at work in agriculture; that agriculture cannot respond readily to the free play of economic forces, once we leave frontier conditions and come into settled conditions and intensive agriculture; that there is no mobility for the peasant. His only

mobility is to leave his farm and go on the road. He cannot contract his production when the market goes against him. He cannot expand his production sufficiently, when times are favourable, to enable him to create a reserve that will carry him over the bad times. There is an essentially different response to price stimulus in agriculture from that in industry, and I believe it is in that difference in response to price stimulus that the reason can be found why industry has relatively had the better of agriculture.

I suggest, also, that the normal financing of capitalism by the joint-stock system and the fact that companies can cut their capital when times go bad is an effective way that the capitalist has of skinning the money lender—I am sorry to use slang. The agriculturalist has few opportunities of cutting his indebtedness that way and of getting rid of his burden. It is only when times become so very serious and the whole structure of the State is in danger that we find the nation stepping in and reducing the indebtedness by means that no economist, of course, could defend, but are absolutely necessary in the interest of the life of the State.

The other thing I am going to suggest is that since the seventies of last century, in every country in the world, the standard of living of the worker in agriculture, whether he is the working farmer or the wage-earner in European agriculture, has been decidedly below the standard of living generally of the industrial population. I am going to suggest that the reason why the industrial population has been able to raise its standard of living has simply been because it has continually interfered with the free play of economic forces. The industrial worker had very little respect for economic forces; he said, 'We are not going to trust the economic forces, we are going to look after ourselves.' And step by step the industrial workers have limited the free play of economic forces, and step by step Governments have been forced into following up the industrial workers, and in that way putting very severe control on the working of economic forces. There is no free play in the way the pure economist discusses it.

Now come to our present situation and the difficulties that we are faced with. There has been a tendency in every country in the world to protect agriculture during the worst of the crisis that we are passing through. I agree with Dr. Ladd that some of the measures have been wise, most of them have been otherwise. But at least it has been an attempt made on the part of the nations to protect the agricultural population from the unprotected impact of those economic forces. And it has meant that every nation has had to take

emergency measures. We all defend emergency measures and we all agree with Dr. Ladd that the sooner we can get rid of the emergency measures, the better. But what are we thinking about? We are thinking that the world will go back to the normal way that we knew in the nineteenth century and the beginning of the twentieth century, that the trade cycles will occur as they did during that period, that we can conquer the emergency period, cast off the things we have done during the emergency period, and go back to some normal period.

The world does not work that way. Every step taken during the emergency period becomes part of the experience of the people, becomes part of the government experience, affects economic forces and affects the economic thinking of the people, and becomes woven more or less into the development of life thereafter. My suggestion, therefore, is that we cannot simply look to the past and think that the economic theory which was more or less, and I want to stress that, which was more or less applicable to the expansive period of the nineteenth century, to the extension of the frontier, to the opening up of new lands, to the scattering of surplus populations all over the world, is necessarily applicable to a condition of things where we have closed doors and nations seeking to establish economic nationalism. Nor is it applicable to a period when we are more likely to be facing a shrinking population rather than the entirely abnormal increase of population which occurred during the nineteenth century. As a matter of fact, the nineteenth century is the peculiarly abnormal period so far as we know history, and the economics, based on the free play of economic forces, which was particularly applicable to the situation in Great Britain in the early nineteenth century, which was adopted and successfully adopted in the colonization of countries over the world, but which was never so completely adopted by the European nations, that economic theory which we look upon as the classical theory, is not necessarily applicable to the situation that we are to be faced with in the future. The return to an effort on the part of Governments and an effort on the part of peoples to direct and control their affairs is not an abnormal development which we have recently been facing, but, if it is examined, is more a return to what is the normal effort on the part of the human race to control its affairs and not leave them simply to the free play of economic forces.

I am not going to suggest a new theory. I am not an economist, I am simply a critic of economists. I have spent my life trying to prove economists wrong in the ordinary industrial field as those of

us have done who are engaged in looking after the interests of workmen. Whether we were right or wrong, at any rate we persisted and we have been successful in protecting to a certain extent the standard of living of the workers during that period. And at the same time as that work has been going on there has been this tremendous growth of social services. All this growth of social services has divided the industrial and the rural worker. Only in very few countries are the social services extended to the rural areas and to the rural workers on the same basis as they are to the industrial workers. Whether you take education, housing, health services, leisure, provision for unemployment, invalidity, or old age, you will find that only within recent years have some countries attempted to give the same social protection to those engaged in rural occupations as they have to the industrial workers, and all that does of course widen the gap between the industrial and the rural populations. No country yet has attempted to give to the working peasant, as distinct from the wage-earner, any of the social protection that is given to the industrial worker in the manufacturing areas. So long as that state of affairs persists, all these things have got to be taken into account as well as the effect of the price level, the effect of production, and the effect of demand. These things are as important in estimating a standard of living and estimating the relative positions of the workers in agriculture and the workers in industry. All these have been conscious attempts on the part of the community to direct things.

We have got to adjust our theories of economy to the conditions of production and the desires of the community in which we are living and make the best of the job. It may be unfortunate that we are no longer following Adam Smith and his followers, but the human race will go its own way, and the best thing we can do is not to imagine that we can bring back the world to our theories, but rather to adjust our theories to the world that we see around us. In other words, agriculture has not worked according to the classical economic theory. The question is whether you are going to revise the theories or to ignore the facts. I suggest that you stick to the facts and reconsider the theory.

T. W. SCHULTZ, *Iowa State College, U.S.A.*

All too often in discussing the relation of agriculture and industry it is assumed that a peculiar conflict of interests exists. This idea of basic conflict has been given far too much attention. It is high time that we go back and examine the dominant economic characteristics

of each. It seemed to me that although Professor Scott on several occasions in his most able manner stressed the complementary nature of agriculture and industry, yet the paper in its entirety appeared to leave the impression that really, after all, agriculture and industry had less in common than otherwise. It would have been extremely helpful if Professor Scott, with his rich understanding of economic phenomena and with his knowledge of agriculture, had outlined the characteristics of both agriculture and industry, and on the basis of such analysis had pointed out to us why it is that certain producers respond in one way while others respond quite differently when they adjust their production to the general influence of, for instance, (1) the several phases of the trade cycle, (2) rapid technical advances, and (3) abrupt shifts in the demand for specific commodities such as had been occasioned by the recent tidal wave of nationalism and its inevitable corollary, economic isolation. But for students of agricultural affairs to proceed upon the assumption that the producers of agricultural goods are in a fundamental economic conflict with non-farm producers is wholly misleading. To do so is evidence of loose thinking.

Instead of lumping all farmers and all industry and calling one white and the other black, progress lies in the direction of classifying producing units on the basis of selected economic criteria regardless of whether the producers are engaged in agriculture or in other phases of our complex economic society. Naturally, the economic criteria employed would depend upon what problem one was seeking to understand.

A line of attack, I believe, which holds considerable promise is to be found in the rather recent contributions to economic theory by Miss Robinson of Cambridge, Mr. Chamberlain of Harvard, and the statistical study of Mr. Means on inflexible prices. We have there set forth why competition in much of economic activity is imperfect in character. The implications and applications of this line of thought are indeed numerous.

This approach would entail the classification of producing units according to the degree of competition that was effective. At the one pole there would be classified those producers who operate under essentially competitive conditions. Looking upon the agriculture of the United States for a moment and considering chiefly the short-run picture, it would appear that the farmers producing the major staples—wheat, corn, cotton, hogs, &c.—all fall into this class, i.e. the producer of these commodities depends upon the demand curve for his individual output as being strictly horizontal in character. Hence, whether he contracts or expands his production as an individual

producer, the price he receives remains unchanged. With over a million farmers producing corn in the United States a single farmer may double his corn production or cut it one half without having any measurable effect upon the market price of corn. Accordingly, with a given prospective price for corn and with alternative opportunities available, the producer of corn will combine his factors of production so that the marginal cost (per unit) is the same as the expected price. At the other pole would fall all producers who have a monopolistic position. In between these two extremes a number of subclasses are required to take care of the varying degree of the *imperfect competition* that commonly prevails.

With a classification of this kind before us instead of the 'agriculture versus industry' type, it will be found that while most producing units in agriculture are at the competitive end of the scale yet there are some agricultural producers who are several classes removed and have substantial monopolistic components in evidence, such as is the case of many of the fluid milk producers in the eastern metropolitan areas and of certain specialized fruit producers in the far west.

But more significant is the fact that this general line of approach suggests a number of interesting fields of inquiry. The first of these would be to determine the proportions of our economic activity that are distinctly in the realm of imperfect competition, and what effect this stratification of producing units has upon the rewards to factors of production. With at least a partially closed door—the policy enforced by the producers at the one end of the scale—what effect does this resistance to the mobility of the labour and capital have upon (1) production in much of agriculture and similar producing units, and (2) income of farmers and others thus situated? To what extent is the apparent general over-production in agriculture due to the controlled production policy of much of our non-agricultural societies with its resulting too high prices for non-agricultural goods and services and consequently a curtailed employment of capital and labour in these producing units? If fewer of our producing units were permitted to exercise the semi-monopolistic position they enjoy, what influence would this have on (1) the additional demand for factors of production not recorded as high elsewhere, and (2) the total income of the community?

Obviously in these brief comments it is not my purpose to follow out all of the many implications herein alluded to. I hope, however, we can soon get away from the too simplified and misleading belief that agricultural production is unique and that the rest of our economic society is in conflict with it.

C. VON DIETZE, *University of Berlin, Germany.*

At some points in to-day's proceedings the discussion has tended towards the duties of agricultural science and the possibilities of scientific investigation of agricultural problems. I would like to deal with this point in a few words. We have in Germany to-day a somewhat different grouping in the scientific treatment of agricultural problems to that of the Anglo-Saxon countries. We have the science of farm management, and we have agrarian policy as a branch of the whole science of political economy or political science. Especially in the field of agrarian policy, which is my subject, we feel very keenly and clearly the necessity of the free exchange of thought, which our president emphasized to-day, not only across the boundaries of states and peoples, but also across the boundaries of the various sections of science. Thus our Conference has the very welcome task of uniting the economic, biological, and sociological aspects, in order to gain a clear perception of the fundamentals of the vital agrarian problems.

I think, in the discussions starting here to-day, we must not limit ourselves to saying 'the classical theory is good or bad, it is useful or useless'; we must rather put the questions: In which problems can the classical theory give us useful aid? and which problems outstep the limitations within which this classical theory is applicable?

We have not sufficient evidence to support the suggestion that was made here to-day, namely, that the classical theory is only of importance for the conditions of the nineteenth century. But, on the other hand, we must coolly and sincerely take full account of the facts which have so materially shifted and altered all conditions since the beginning of the twentieth century, and particularly in the last six years. To-day we have heard of the special aspects of agriculture, of its limited adaptability to changing prices; there was even mentioned a negative reaction to prices in agriculture as compared with industry. This observation undoubtedly contains much truth, and it leads us right out of the domain which can successfully be investigated by science under the rule of economic theory which is based on the assumption of a *homo oeconomicus*. In agriculture we have the *homo rusticus*, toiling, in the main, as I may say, in the interests of his family, and if in agriculture the reaction to changing prices and particularly the possibilities of restriction of production are other than in industry, that is not so much a result of the technical and natural differences between agricultural and industrial production as of the dominating influence of the family unit in agriculture. For

the family unit cannot reduce its supply of labour and, in the event of unfavourable prices, must try to balance the effect on the total income, very often by increasing the output.

In mentioning the family economy, which I will treat of further in the course of our Conference in another connexion, we have already passed out of the field of economy into that of sociology. And, in regarding the changes in trade of commodities and the migrations of men and capital, we are urged again to outstep the bounds of economic theory. If to-day, in the whole world, the conditions of exchange of goods are different to what they were a few decades ago, political events are mainly responsible for this change, if, indeed, they are not the decisive factor. The growth of great empires, which completed their development in the second half of the nineteenth century by economic methods, is a fact which cannot be neglected in dealing with the problems of international exchange of goods, which are so important to the position of agriculture.

Wherever, therefore, we follow the questions of agriculture and its present position, we come to limits beyond which we cannot master these problems with the conceptions and the means of the classical theory. But that does not signify that this classical theory is useless and quite obsolete to-day. Which school of thought, striving, as is our task, to adapt thought to facts, could presume, of its own accord, to pursue the welter of problems to the very end by one single method? We need the approach from various angles. We need the economic, sociological, and also the biological approaches. To quote one example, how would it be possible to understand the currency problems and currency policy, so important to present agriculture, without economic theory? Nevertheless, we shall serve our purpose at this Conference best, if we do not confine ourselves to the economic aspects. This Conference will be more than just this session of to-day, which promotes the discussion of economic problems and methods, if we really are determined to practise the free exchange of ideas between the various branches of science to the mutual benefit of them all and to the benefit of our Conference and this meeting.

THE RELATIONS OF LAND TENURE TO THE ECONOMIC AND SOCIAL DEVELOPMENT OF AGRICULTURE

FIRST OPENING PAPER

M. SERING

University of Berlin

THE investigation of the agricultural systems of civilized countries initiated by the International Conference and the discussion of to-day, which is connected with it, are aimed at the practical utilization of the information collected. But we must bear in mind that we are not free to choose an economic and social system. Hippolyte Taine enunciates this truth as follows in *Les Origines de la France contemporaine*: 'The social and political forms which a people can adopt and retain are not a matter of choice, but are determined by its character and its past.'

From this it follows that the experience of *one* nation has only a limited application to the land-tenure system of *another* nation. The inherited economic and legal systems must be judged in relation to the different conditions of their development and effectiveness, to the nature of the land, the race, the mental powers expressed in language, and, above all, the political history of the people.

When our British colleagues speak of the future of their land-tenure system, we who are guests of this country cannot but respectfully listen, remembering how much the old system has contributed to the civilized world. Great Britain is, together with Holland, the founder of rational agriculture, and also the home of large-scale mechanized industry. We are also aware that the British system of land tenure was created by the same ruling class which made the British Isles the centre of a world empire, namely, by the landed aristocracy, in close co-operation with the upper middle class which from the earliest times absorbed the younger sons of the nobility. Wealth flowed in from the colonial empire and bore fruit on British soil. The peasantry, forced to leave by the enclosures, found for the most part a new and more extensive home in the Dominions. British industry finds privileged markets there, while on the other hand the agricultural products of the Dominions are marketed in Great Britain.

But conditions of this kind are not present in any of the Teutonic or Slav countries of the continent about which I have to report, with the exception of Holland. I shall pay special attention to those countries for which reports are available in printed form or in manuscript, i.e. Yugoslavia, Bulgaria, Switzerland, and Germany. In all these countries the self-farmed peasant holding is the most important factor. The most extreme contrast is that between the German and the British agricultural systems. Up to the time of the War almost nine-tenths of the land available for agricultural exploitation in Great Britain consisted of lease-holdings, and in 1927 the proportion was still two-thirds. In Germany almost nine-tenths of the farming land is the private property of the farmers. How did this contrast develop?

In both Great Britain and Germany the origins of large-scale land tenure go back to the organization of the medieval feudal state. But in the Frankish and German Empire the feudal system never assumed the strict and systematic form which the French Normans introduced into England after the Conquest. While preserving the war-like and colonizing powers of the Vikings, they had won, through their contact with the Latin world in Normandy, as Trevelyan assumes, a marked sense of political unity and ordered administration. In England the royal prerogative and that of the king's vassals applied to all real estate, including the commons and communal forests. The peasants who became villains had no legal rights in relation to their lord, but were subject to his jurisdiction. In contrast to this position, the German villains represented associations endowed with extensive rights. They were owners of their land under the estate laws, including the commons and forests, and they themselves were the judges in the land courts. 'The Kaiser is equal to the lowest if he trespasses against the law', says an old list of the estate laws for the royal estate of Elmenhorst in Westphalia.

Two great events transformed the history of the peasants north and south of the North Sea: the growth of urban communities from the twelfth to the fourteenth century and the great geographical discoveries at the end of the fifteenth century. The development of finance and commerce in the towns and the influx of precious metals from the East during the Crusades brought about a big rise in agricultural prices and caused the landlords all round the North Sea to make their villains free farmers who held the land on lease for a fixed term of years or for a lifetime. The paths of the peasantry in the two countries diverged again, however, from the sixteenth century onwards. It was at this time that the series of expeditions was

begun which continued for several centuries and finally brought one-fifth of the earth's surface under British rule. The classes of society which conducted these expeditions, the landed aristocracy and the upper middle class, carried out the organization of the agricultural system, chiefly in the seventeenth and eighteenth centuries, to serve their interests in a very rational way.

On German soil the most powerful medieval empire was broken up into numberless territorial states and its wealth and culture declined during centuries of warfare. The reconstruction was the work of the great territorial princes. The financial and military foundation for this work of reconstruction was the great self-contained peasant farm with its well-regulated family, its large teams of horses or oxen, and its important economic efficiency. In this way the great territorial princes became a protective force against the nobility which had come to be a privileged class.

The aspect of agriculture from the North Sea to the Alps is still determined by the great peasant farm of from 75 to 100 acres. There are also smaller tenures. The same applies to the land east of the Elbe and the Saale, which was recoccupied by the Germans from the twelfth to the fourteenth century. But here, in contrast to west Germany with its scattered landed estates, manorial estates enclosed in the Norman style existed from the beginning along with the peasant villages. West of the Elbe the lease-holdings were protected, in regard to succession and against increases in rents, as early as the sixteenth century, partly through the intervention of the territorial rulers and partly through custom. East of the Elbe it was the famous protective agricultural legislation of the Prussian kings, especially Frederick the Great, which saved the peasants from a fate similar to that of the English peasantry, maintained their position of ownership according to numbers and area, and at the same time increased their numbers systematically by means of inland colonization. During and after the Napoleonic wars the peasant holdings in east and west Germany, protected in this way as they had been, were transformed into fully-owned holdings exactly like the manorial estates.

The wine-growing regions in west, south, and parts of central Germany had a peculiar development of their own. In these regions the peasants gained full ownership of their holdings as early as the thirteenth century. The custom grew up at that time, with the approval of the lords, of dividing up the peasant holding into hereditary allotments, which meant more frequent change of ownership and an increased control of their land by the peasants. The lords guarded against loss by means of high death duties and taxes

on change of ownership. But in these peasant districts there also arose a truly grotesque system of small States, which led to abuses that caused the great Peasants' War of 1525. A sensible system of public and agricultural administration was first set up in the stormy times of the Napoleonic wars.

To come finally to Switzerland, the organized peasantry, in association with the towns, put an end to feudal conditions as early as the fifteenth century. Switzerland is a country with no large estates and no large-scale farming.

The result of the historical development is the present distribution of land tenure. More than one-fourth of Germany (27.3 per cent.) is covered with forests. About three-fifths of the forest areas belong to the State, local authorities, and other public bodies, who manage them well. The agricultural soil is nearly all in private hands and mostly in the form of peasant farms cultivated by the owners. In eastern Germany 36 per cent., and in the whole of Germany 18 per cent., of the land under cultivation is occupied by large farming estates of more than 250 acres. This agricultural system, founded as it is on the principle of private ownership by the farmer, was not created, as has been asserted, by middle-class liberalism in an attempt to make an ally of the peasantry; it grew out of the ever-cherished conception of land ownership and independence as the essentials of a free yeomanry. The holding of land on lease is, in Germany and in most of the other Germanic and Slav countries of middle Europe, merely a means of supplementing private ownership. Apart from particular individual conditions, the land held on lease has a double function: (1) to keep the size of the peasant farm fluctuating in relation to the number of hands available and to make the attainment of independence easier for the small landholder, and (2) to make possible the utilization of the extensive State lands (2.5 million acres) and some big former manorial domains through permanent leases to efficient entrepreneurs. These lessees came mostly from the business and industrial classes of the towns, and first introduced a business spirit into large-scale farming, in the sense of adapting the farm management to suit the different turns of the market.

The fact should be of special interest in Great Britain that we in Germany have more than 400 large agricultural concerns which are owned by private companies, of which four-fifths are administered for the company, and one-fifth cultivated by lessees. These are for the most part business companies which combine an industrial concern, such as sugar-making and distilling, with agriculture, or else large mining concerns and other industrial works dealing with

inorganic products, which aim at securing an area where mineral supplies are to be found, or experimental stations for testing fertilizers, &c., or for raising seed. These concerns have the advantage over private businesses in that the difficulties that otherwise occur with the inheriting of real estate are altogether avoided.

The social and economic significance of the existing agricultural system must be judged with reference to the fact that Germany constitutes to-day a genuinely industrialized country. An increase in prosperity and in industrialization began with the building of the railways and the founding of the German Customs Union at the beginning of the thirties of the nineteenth century. And when Bismarck re-established the German Reich, the accumulated forces of the people gave rise to a period of really impetuous development. Germany rapidly became the leading industrial country of the continent of Europe and plunged far into the then developing world economic system. Between 1800 and the present day the population of Germany has trebled.

But the number of people engaged principally in agriculture has, for reasons to be stated, remained almost unchanged in spite of the great preponderance of rural births. Hence the entire agricultural population to-day constitutes only 20 per cent. of the population as a whole. This figure gains, however, a new importance through the social structure in agriculture. In the summer of 1933, 8½ million people were engaged in agriculture permanently and as their main occupation. Of this number 76 per cent. were members of the farmers' own families working on the land, including the farmer himself. Fourteen per cent. belonged as male and female farm-hands to their managers' households, and only 10 per cent. (in actual numbers 889,000) were permanently employed as day-labourers.

It is clear that the foundation of the social structure in Germany consists of a large body of independent agricultural landowners. In this body class distinctions are as good as non-existent. The great majority of the people working the land are united by ties of family affection with the farmer, and belong to the same class. In this way the social structure in agriculture is distinguished from that in all other vocations. The share of agriculture in the independent class of society in Germany is treble its share in the population as a whole, i.e. 60 per cent. as against 20 per cent. The farmers thus constitute the backbone of the independent classes, and the same is true of Germany's neighbouring countries. This social structure in agriculture imparts great security and power of resistance to the whole body of the people.

It is also of decisive importance for the structure of all non-agricultural vocations. It is absolutely false to maintain that the peasantry constitutes the greatest reserve source for the town proletariat. We know from many individual census returns what has become of the younger generation of the peasantry. The majority belong to the class of independent entrepreneur, chiefly in agriculture and secondarily in industry and commerce. Less than 10 per cent. become industrial workers, and of these the large majority are skilled workers. But since every urban population has its origins in the rural population, it is to be understood in this connexion that almost half the money-making population in Germany outside agriculture is still engaged in handicraft occupations; and again from this extensive class, which is by no means in a state of decline, are chiefly recruited the German skilled workers who are responsible for the remarkable efficiency of German industry. This industry is in the main 'refining industry', carried on chiefly in small and medium-sized concerns. Large concerns predominate only in mining, metal-founding, and the electro-technical and chemical industries.

Thus the German agricultural system conveys life-blood to the whole social body through the system of arteries which radiates from it, and in this way determines its whole character.

In order to gain an idea of the economic achievements of this agricultural system, one must first acquire a clear conception of the character of the peasant and large-scale farm and of the inner relation of the property owner to his holding.

Here it is especially important to recognize the modifications which ancient forms and conceptions have undergone through the organization of society on the basis of industrialism. In Germany the conception of the peasant farm includes:

1. The idea that it constitutes a means of maintenance by the cultivation of the soil, i.e. that it guarantees the farmer and his family full maintenance in accordance with their social position. The labour for this self-support is available in the family itself, supplemented when necessary by outside help. (This conception has its origins in the ancient hide system, and reoccurs in the Federal Homestead Law in the United States of America. On the old free peasant farms on the North Sea the usual size for a hide is 100 acres (= 160 Prussian morgen), and the American homestead is known to consist of 160 acres. But naturally the lowest limit of self-maintenance from the soil, especially in the West and South, is much lower, and fluctuates a great deal.)

Since industry has removed the home handicraft trades from the

peasant farms, this idea of self-support by the cultivation of the soil also includes important market implications for the farms. According to the statistics collected by the Farm Inquiry Board, small family-managed farms of from $12\frac{1}{2}$ to 25 acres send, in specially unfavourable climatic and economic conditions, two-thirds of their products to market; medium-sized farms of from 50 to 62 acres send, in specially favourable conditions, 80 per cent.; while large farms of over 250 acres sell from 80 to 90 per cent. of their products. For all farming concerns in Switzerland, where books are kept, Howald records an average of 82 per cent.

The German peasants, therefore, regard the main part of their farm produce as a means of making money. For this reason they have been accustomed to keep clear accounts of their cash income and expenditure. Nevertheless, the factor of self-support, which increases with the decreasing size of the farm, is of great importance for the power of resistance in face of periods of depression.

2. In the second place, the peasant farm is a family-managed concern with horse power and machinery. Farms of between 25 and 50 or 50 and 125 acres seem to be the best size, and for this reason tend from census to census to represent an increasing percentage at the expense of others. On the smaller farms among these and on farms on light soil there are permanently working from 4 to 5 persons, always including the farmer and his wife, on the others from 6 to 10 persons; while the large estates of over 250 to 500 acres employ from 21 to 100 persons, being reckoned according to the industrial scale as medium-sized concerns.

On the large estates the majority of the labourers are men, whereas, on the family-managed farms of 125 acres and less, men and women do equal shares of the work. This is the traditional division of labour. But on the small peasant farms, where few or no outside helpers are employed, the woman's work has greatly increased. As the inventor of gardening, woman's original occupation is confined to hoeing work on enclosed allotments or in the garden, and to the care of the young animals. The man ploughs the land, which has meant the grain fields for 1,500 years. But since from the end of the nineteenth century produce previously confined to the garden has been transferred to the fields, as beet and potatoes, &c., and since pasturage has been replaced or supplemented by stall-feeding and fodder-growing, the women perform in addition a great deal of work on the land, and their work with the live stock is increased. This development is not without its dangers, since thereby not only the mother of the individual family, but the mother of the nation is

often overworked and runs the risk of premature ageing and of being rendered incapable of continuing to replace the population claimed by the great cities.

In this connexion the question of improved implements and machines assumes great importance. From the beginning of their history the Germanic peasants employed machines. They used the heavy iron plough drawn by horses or oxen, which does not merely scuffle the soil like the Slav or Romance hoe-plough, but cuts the sods and turns them over. The size of the ancient hide was adapted to this type of plough. Thus modern agricultural machinery as employed on the large estates was adopted more and more on the peasant farms. The machinery serves here less as a labour-saving than as a time-saving device and also as a means of easing and, as in the case of the drill machine, improving the work, and for this reason is seldom purchased on credit. The electric motor has in recent times become extremely widespread in use, and by means of attached machinery not only lightens the work on the farm and in the stables, but also affords more and more relief to the much-burdened farmer's wife.

Owing to the adaptation of the manner of farming to market requirements, and the abundant use of means of production, the peasant farm could be described in the same way as the large agricultural estate, namely, as a capitalistic business concern. But the peasant farm differs from the capitalistic business enterprise in the following ways:

1. In the labour system. The chief labourers are members of the farmer's own family. A large number of the sons and daughters continue working on their father's farm for 10 or 15 years after leaving school, in return only for their keep and pocket-money. They thus produce, as a rule, the value of the sum out of which they receive a settlement when they leave home later on. The main part of the *income* on the family farm is the equivalent of the workers' wages, whereas on the large agricultural estate the workers' wages constitute the most important item of *expenditure*. This is the reason why the family farms seldom suffered from lack of labourers, even at times of the greatest industrialization, and were on the increase at the expense of the large farms.

2. The second contrast with the capitalistic concern lies in the fact that for the German peasants, and also for many big landowners, the ancestral farm represents more than a means of making money. It is for them heritage and home, and the pursuit of agriculture is for them not only a business but a calling which fills their whole lives.

Here is a separate world of traditional sentiments, which has remained a source of strength for hundreds and thousands of years. Its clearest expression is to be found in the peasant family constitution and customs of succession.

The Germanic family is a proprietary association. As long as the father and mother are alive, there exists between them and their children, in contrast to the Slav family, no kind of common land tenure. All the children have equal rights. But the custom dates back to the earliest times that only one of the sons may bring his wife into the paternal house. When the parents grow old, this son takes over the farm, not as the born ruler of his brothers and sisters, but, according to the German principle of leadership, as the first among equals. He thus owes his brothers and sisters a settlement from the value of the farm. This is opposed to the feudal system and opposed to the English common law. The settlement is not reckoned according to the selling price, for the farm is in no sense a commercial object; it is decided on principle according to the producing capacity, and in such a way that the burden on the successor to the estate shall not be more than the farm is capable of bearing, the guarantee of a suitable maintenance being preserved. A limit is thus set to the debt, which ensures the preservation of the farm for the family from generation to generation.

In a country that has long been settled and where the population is increasing, the selling value of estates tends to exceed their value in production, from the simple fact of the competition of the lesser people climbing up to independence. This results in the danger of the estates being over-burdened with rigid mortgages, if land changes hands in the order of inheritance or by sale like goods on a credit system. Hundreds of old-established families with large estates were uprooted by this process and through taking part in land speculation during a boom and being involved in the ensuing slump in prices. The lessee is insured against danger of this kind. The lease of land involves the lessee who lays out capital in economic risk. But equally the custom of succession described above provides protection against danger of this kind, by removing the landed properties from the real estate market. This custom was responsible for the fact that before the War in large regions of hereditary land tenure, such as Hanover and Westphalia, the burdens on the farms were on the whole statistically nil. As far as I can judge, the sentimental relation of the present-day large estate-holders to their estates is generally, after bad experiences, no different from that of the peasants.

The privately owned farm, so long as it is not oppressed with

debt, allows the farmer more freedom of movement than the leaseholding, because it is easier to obtain credit for productive purposes. In Great Britain every one knows how cleverly the Danish farmers have adapted themselves to the requirements of the English market. In Germany a good adaptation to the necessities of urban and industrialized society is also observable. As is well known, this is becoming more and more a question of refining processes and live-stock rearing, of produce such as meat, eggs, milk, poultry, fruit, and vegetables; and it is just this kind of produce that the large number of workers on the peasant farm can raise. The manager of the peasant farm is faced with the task of keeping his fellow workers occupied as fully as possible by an intensive system of labour; whereas on a larger estate the aim must be rather to economize with labour.¹

From a truly national economic point of view, one can hardly speak of a waste of labour, at least in a country with so limited an area as Germany. In this connexion, special importance attaches to the social fact, already mentioned, that in Germany the proportion of the agricultural population has been slowly but steadily decreasing during the last fifty years, while agricultural production has greatly increased. Thanks to technical improvements, production has undergone a continual increase per head of the agricultural population. In agreement with this fact is the observation that, in general, for some time past, and of late also, the numbers of small farming concerns in the allotment districts have been decreasing owing to the buying up or leasing of land. The tendency towards emphasis on farms of between 25 and 125 acres is connected also with the fact that, for the last 30 to 50 years, the area of the large farming estates has diminished. The family farms with their horse power and machinery have thus on the whole proved themselves the stronger in the struggle for land.

It was thus thanks chiefly to these farms—under the indispensable guidance of highly organized large farming concerns—that before the War, in 1913, only 20 per cent. of the amount of calories necessary for the national sustenance were lacking. But between 1870 and 1914 the population of Germany had increased by 70 per cent., while the standard of living rose. After the War, we may note in anticipation, the increase in production continued. Germany had lost one-eighth of her home territory. In 1935 the population of the diminished Germany equalled that of the Reich before its dismemberment (67 millions). In spite of this fact the same quota of calories is still covered by home production.

¹ Howald, *Switzerland*, p. 32.

The description that has been given here of the general facts and achievements of the German land-tenure system applies on the whole to all Germanic countries of the Continent. The custom of succession is in force from Norway to the Swiss and Austrian Alps, and has spread from these territories to other non-Germanic neighbouring countries. This refers to the countries all round the Baltic from Finland to Lithuania, and, in addition, to the western part of Poland which, with its large German population, was formerly Prussian, and finally to Czechoslovakia, a country which has also an important German minority, especially the highly industrialized districts of Bohemia and Moravia. I shall pay no attention to the special characteristics of the 'parcelling' regions of Western and Central Germany. The report on France will give a certain amount of information on this point.

But for Germany, and to some extent for the whole of Central Europe, the War entirely changed the general economic conditions, and the future of the German land-tenure system depends on the answer to the question whether the damage caused by the War and through the peace treaties can be remedied or not.

Before the War, to emphasize only the most important point, Germany was a country rich in capital. Abundant capital at a low rate of interest flowed into agriculture through an excellently organized credit system. But with one stroke the War made Germany the poorest in capital of all the industrial countries in the world. As a means of assistance foreign credits at a very high rate of interest were granted. Farmers who made use of credits of this kind were doomed from the start. In the meantime Germany, like many other countries, has executed plans for releasing the over-burdened land estates from debt and for lowering the rate of interest on debts already contracted. Short and medium-term credits, with the help of the great co-operative system organized for the last 80 years by the peasant farmers themselves, and of the labour schemes and market revival so energetically carried out by the present government, are more or less restored. But long-term credits still remain extremely scarce.

But above all, the Peace of Versailles ruined world economy and thus one of the strongest supports of German industry. The four World Powers, which, having in the last two generations attained through railway construction and colonization a great ascendancy, carried on the coalition war against Germany, now rule more than 60 per cent. of the earth's surface. They have control of the larger part of the raw materials. But Germany, reduced by the War also to the poorest in raw materials of all industrial countries in the world, finds herself forced by the commercial and monetary policy of these

powers, directed against German industrial goods, to buy the raw materials from those countries with an agio. This means depression in the productivity of German labour. This unfavourable barter relation must in the long run also influence the agricultural income, because the income of the farmers depends on the purchasing power of the industrial and urban population. Pushed away from the markets of the World Powers, Germany is compelled to adopt closer commercial relations with those countries which are the unwilling sharers of her destiny, and which are ready to take without special impediments German manufactured articles in exchange for raw materials. This applies to Central and South America and especially to south-eastern Europe. May I be allowed first to give a short account of the agricultural conditions in this last region?

The Yugoslavs have retained the patriarchal family as the most important unit of human communal life longer than all the other Slav peoples. Under the leadership of the father or the eldest member of the family, several married brothers and sisters and other blood-relations live together in a communal spirit in the household and farm. The fact of 20, 40, or 80 people all living together allows of a considerable division of labour. Every one is familiar with the beautiful woven materials, so delightful with their manifold designs, that are produced by the Yugoslav home industry. The patriarchal family has an effect on agriculture similar to that of the German custom of succession, that is, the preservation of the estate and the maintenance of its efficiency. This was also the reason why the patriarchal families were protected and favoured by the former local rulers or by a foreign State. But in Greater Russia the patriarchal family declined soon after the liberation of the serfs (1872), and in the Balkan countries it declined after the liberation from Turkish rule, the triumphant ideas of economic liberalism allowing each individual to choose his own occupation freely and to keep what he earned for himself. The patriarchal families were then rapidly broken up into individual families, and this process was quickly followed by a tremendous disintegration of real estate, for the legal organization of the patriarchal family is repeated in the individual family. Both are organized on communal lines. The estate, with all its appurtenances, is therefore not the property of the head of the family, to dispose of as he likes, but is the common property of the whole family. When the property is divided, each son obtains an equal share with the father. But this idea of the common ownership of the family is a favourable factor for early marriages and for a large increase of the population. The young men usually bring their

wives into the paternal house at 18 or 19 years of age. On the other hand, the close connexion between home industry and agricultural labour in the patriarchal family has for a long time restricted the development of an urban industrial culture. In Bulgaria, according to the report sent to us from that country, accommodation has to be provided every year for from 45,000 to 50,000 peasant families who wish to remain on the land. The same phenomenon also occurs in Yugoslavia and Poland.

As a result, in the distribution of land, the stress tends continuously to be laid on the smaller and smallest holdings; in marked contrast to the Germanic countries, the numbers of those engaged in agriculture constantly increase, and the larger part of the produce (according to estimate, on an average two-thirds) is consumed by them personally.

The lack of land is aggravated by the multitude of small strips, which enforces the maintenance of a primitive two- or three-field system, mostly with a view to grain-growing. In addition to all this there is, since the War, the same commercial pressure which I stated to be a factor in Germany. The economic surplus of south-eastern Europe, i.e. agricultural surplus, can be disposed of on the chief European market, the British, if at all, only at prices lower than those of the customs- and quota-favoured countries of the Empire. I have already pointed out the inevitable results of this pressure, namely, the close economic inter-relations between Germany and Italy on the one hand and 'intermediate' Europe on the other.

A way seems to be indicated in this direction in which a recovery can be found from the fundamental economic ills from which central Europe is suffering. This is the weakness of its position in world commerce, which has originated in the disintegration of central Europe from the point of view of commercial policy. Before these fundamental ills are removed, specific agricultural reforms can effect no thorough or permanent remedy either in south-eastern Europe or in Germany. If one includes Germany and Italy, central Europe from the Baltic to the Aegean Sea constitutes an area equal to about one-third of that of the United States. This area has 225 million inhabitants whose barter trade is impeded by the customs frontiers of fifteen States. These frontiers correspond roughly to the varied minglings and differences of nationality, in which the great richness of European culture finds expression. No one would dare to advocate the wiping out of these differences. But from the economic point of view and according to the standards of the technique of modern transport, the commercial disintegration of this region is no better

than the situation in Germany before the establishment of the Customs Union. If one supposes merely a system of preferential treatment, such as would lessen the commercial difficulties in central Europe, extraordinary advantages for national and international division of labour present themselves at once. For 'intermediate' Europe is rich in materials in which Germany, Czechoslovakia, and Italy are lacking, namely copper and iron ore, mineral oil, flax and hemp, vegetable oil and albuminous fodder, tobacco, &c; for the extension of more intensive cultivation of the 'intermediate' European countries, and especially the Danube countries, still offers very large room for development. The over-population of rural districts in the Danube countries demands in addition the development of industries for the manufacture of articles in daily use. This will result in still larger markets for the high-class goods of the older industrial regions. Given an improved economic organization, the previously described countries of 'intermediate' Europe are, with an average of 57 inhabitants per square kilometre, certainly not over-populated; they are considerably less densely populated than France (76 per square kilometre), which in turn is scarcely more than half as densely populated as Germany and Italy with populations of 140 and 133 per square kilometre respectively.

The great economic area that is growing up in central Europe means, therefore, a progressive step in organization, not only for central Europe but for the whole civilized world. The disparity between the great natural riches of the four World Powers in European civilization and the lack of conditions for the development of disintegrated central Europe make up the most far-reaching cause of the prolongation of the most difficult of all periods of economic depression. An improved organization of the economic system in central Europe thus offers the possibility of a more regular development of prosperity in all parts of the civilized world. By means of the reorganization of central Europe a foreign trade policy over the whole of the shrunken earth's surface will first be made possible, such as will develop systematically an international exchange of goods, built up on a genuine and not merely formal equality of rights and respect for the needs of all civilized nations. Only when the pressure is thus removed from those nations inhabiting restricted areas, can there be assurance that the social order and its foundation, the agricultural order, can continue to develop regularly and without catastrophic disturbance, in the sense of the words of Freiherr vom Stein: 'The present must be developed out of the past, if it is to be assured of permanence for the future.'

THE RELATIONS OF LAND TENURE TO THE ECONOMIC AND SOCIAL DEVELOPMENT OF AGRICULTURE

SECOND OPENING PAPER

A. W. ASHBY

University College of Wales, Aberystwyth, Wales

IN presenting this paper I need to explain that I have attempted two tasks: first, to make a statement that may lay open for discussion the whole subject of land tenure in relation to agriculture; second, to give a brief description of the British systems of tenure. The two separate parts of this paper may thus lack some desirable cohesion, but I did not feel that in the circumstances it was desirable to sacrifice either of them.

If we look at land only from the point of view of agriculture, we are mainly concerned with its use and its maintenance; we are concerned with ownership or tenure only so far as this affects use and maintenance or improvement. If, however, we look at land from the point of view of the agriculturist as economic entrepreneur, we may sometimes be far more concerned with aspects of ownership or tenure than with those of agricultural use or of maintenance or improvement for agricultural purposes. The interest in investment or in property exploitation is far greater than that in current results of use for agricultural purposes. There are periods when even a majority of agriculturists are far more concerned with property exploitation than with current profits or earnings. Or if we look at land from a general social point of view, we must attach as much importance to its property elements as to its use or maintenance for agricultural purposes. Indeed, we may have to recognize that in many periods and places property elements in land have been far more important than its immediate agricultural connexions, and that the importance of its property elements does not necessarily arise directly from agricultural use, even where agriculture is the predominant industry. This is the case when property rights confer personal status or when they confer or restrict rights of citizenship.

Until quite recently every system of land tenure has been very closely connected with the chief social institutions and with the laws and customs governing their maintenance and change. It had, and

in some areas still has, a very close relationship to systems of marriage and the form of the family, especially the latter. Almost universally systems of land tenure are closely related to laws and customs of inheritance. Systems of marriage, forms of the family, and systems, laws, and customs of inheritance are of course closely related to each other, and in their complex whole they have at times dominated the formation and development of systems of land tenure. Forms of the family still exercise considerable influence on current use of land and on the making and disposal of current income in various countries, while systems of inheritance exercise strong direct influences on tenure of land, size of units of property and of units of agricultural exploitation, and even on current use, in many countries.

Thus any consideration of land tenure must touch institutions which are held most sacred and are regarded as of the greatest importance to society or to social classes, almost irrespective of the immediate relations between land tenure and agriculture.

If the mention of these relations between forms of the family, inheritance, and land tenure is regarded as an approach to the more primitive aspects of social organization, I must bring to memory the fact that on every occasion of the occurrence of economic or social breakdown, on almost every occasion of outbreak of social fear, the social mind immediately returns to the regard of the primitive connexions between land tenure and the family. Indeed, the arrangement of this discussion is in part one manifestation of this tendency.

But the intimate connexions between land tenure and the most salient social institutions do not stop with those relations which arise from the institution of the family. Systems of land tenure have been and still commonly are intimately related to the essential principles prevailing in current systems of government; and, although it may not be obvious, the dominant ideas regarding land tenure and changes therein often arise from the same sources as the ideas about political organization and government which are currently dominant. The theory of the divine right of kings was as much a theory of land tenure as of government, and at times its effectiveness as regards land tenure alone made it effective in government. But a theory of democracy, tinged with equalitarianism, largely shaped the land policy of U.S.A. after 1800 and has also largely shaped the policy of New Zealand in the last half century.

While the relations between land tenure and the principles of government may not be obvious in a country like Great Britain, so predominantly concerned with other forms of property, there is still a close connexion between tenure of agricultural land and the con-

tinuance of an hereditary peerage and its continued enjoyment of special political privileges and powers.

We need not confine attention to historical phenomena or to social vestiges when we think of land tenure in relation to the dominant political ideas, for it is still obvious in some parts of the world that dominant and active political principles shape land tenure and in other parts that dominant systems of land tenure effectively qualify, even if they do not nullify, recently established political systems of a democratic character. It is only a century since rights of citizenship depended on property rights in Great Britain, and in some countries tenures still confer or restrict rights and privileges of citizenship. Wherever agriculture constitutes the chief source of livelihood of more than half the people the system of land tenure and that of government will depend one upon the other, and the continuation of strong social conflict between the two systems is practically impossible. Either one must dominate and shape the other, or both must be continuously modified until there is between them practical consistency of social principle and objective.

The social relations of land tenure do not end even here, for more immediately in the economic sphere it will be obvious that one of the dominant sets of factors in social evolution, both as result and cause, is to be found in the relations between systems of land tenure and systems of exploitation of labour. We sometimes speak loosely of 'exploitation' of land, but one of the most important facts in connexion with land and land tenure is that there is no system of exploitation of land (in the sense of robbery) which is not self-destructive. Unlike human beings, land does not breed in poverty, and increasing poverty could not make it breed more rapidly. On the other hand, in most of the phases of the history of human society there could not have been exploitation of labour, or any use of the involuntary industrial activity of one human being for the special benefit of another, unless systems of land tenure had provided opportunities for such exploitation, and indeed quite often had been arranged to expedite it. The chief reasons for arrangement of land tenures in certain forms are that they provide for related forms of exploitation of labour. Many people may boggle at this statement and try to give other fundamental reasons for the shaping or the existence of certain forms of tenure, but at the same time they will not deny that other forms, such as small-scale occupying-ownership or forms of community ownership and use, have been designed to avoid the possibility of the cruder and large-scale forms of exploitation of labour.

Indeed, ideas and facts of human superiorities and inferiorities, ideas and systems of social stratification, ideas and systems of exploiting whole groups for the metaphysical ends of 'the State', or of exploiting the socially inferior for the mystical ends and purposes of a State or 'civilization' which is conceived as consisting entirely of the small superior group, have all entered into the determination of systems of land tenure. But simple plain exploitation of the labour of the needy, landless, or socially inferior for the material benefit of those in control of the land, without any mystical objective of the privileged and even without attempt to show any form of moral justification, is sufficient to account for many systems of land tenure. Justification by social ends or on moral grounds may be important, but it has not infrequently been the result of afterthought.

The mere listing and economic characterization of systems of land tenure, especially characterization from the point of view of production, are sufficient to show their connexions with forms and degrees of exploitation of labour. It seems almost impossible to compile a complete list of forms of land tenure in relation to agricultural production, but the following may be indicative of the chief forms:

1. The feudal form, with rigid social stratification and servile labour at the lower end, but with recognition of mutual obligations throughout the relations between the strata, and a clear connexion of the persons of each status and the whole group with a definite area of land.
2. The estate system with direct labour.
 - (a) Direct use by or on behalf of the proprietor, cultivation by slave or indentured labour.
 - (b) The same system, but cultivation partly by wage-paid and partly by slave or indentured labour.
 - (c) The same, but cultivation by wage-paid labour.
3. The estate system with 'share tenancy' systems.
 - (a) With *métayage* in various forms and degrees.
 - (b) With modern share tenancy systems.
 - (c) With 'cropper' systems.
4. The estate system with 'stock and land leases'.
5. The estate system and tenancy with fixed rent in cash or kind.
 - (a) With forms of permanent tenancy (*emphyteusis*, &c.).
 - (b) With short-period tenancy (contracts not exceeding 21 years).
6. Ownership occupation and cultivation.
 - (a) With relatively little mortgage credit.
 - (b) With widespread assistance of private credit mortgages.

- (c) With widespread assistance of State credit mortgages (or State support of mortgage system).

Besides these, there are systems in which there is no recognition of private ownership :

7. Public (state or municipal) ownership.
 - (a) With individual tenancy and use.
 - (b) With co-operative or co-partnership group occupation and use.
8. Tribal (clan or group) occupation and use without recognition of ownership.
 - (a) With group use of land and ownership of crop.
 - (b) With use of land and ownership of crop by complex family.
 - (c) With individual use of land and ownership of crop.

There are many mutations and variations of these systems. In some cases characteristics may partly depend upon whether the estate is in the 'home' country or in a colony or dependency, or upon whether or not owner and servants are of the same race or colour. The 'plantation' system, whether in relation to the current production of rubber or tea or the early production of cotton in U.S.A., does not seem to show any very important variations. Its most evil features arise both from the possibilities of exploitation and from social differentiation between owners and servants. But the estate system with direct wage-paid labour does not differ in essential economic characteristics, and under some circumstances is a more efficient organization for exploitation than the 'plantation' system.

In sections 2, 3, and 4 on the list—estate systems with direct labour, with share tenancy, and with stock and land lease—there is clear differentiation between ownership functions in relation to land and labour functions of all grades, but in section 3 there is some variety in positions with reference to supply and use of movable capital, and in section 4 there may be differentiation between management and labour functions which are matters of character rather than degree. In section 5—estate system with tenancy—ownership functions are further differentiated from those of management, but the form and degree of exploitation of labour largely depends upon the source of supply of labour, whether from the family of the tenant or from a differentiated class of wage-earners. In section 6 there tends to be little differentiation of function between ownership and management, but in some cases there is complete differentiation between these functions and those of labour.

Up to a high and comparatively recent phase of social development, exploitation of labour in societies consisting mainly of persons

of the same race or colour depended mainly upon the appropriation of land by a successful minority. So far as there are records, it appears that exploitation was strictly limited in scope and degree so long as free land was available for settlement and use by such societies. With conquest of one society by another there was sometimes both appropriation of land and enslavement of people or establishment of servile status, but when the systems of servile and tied labour and of slavery passed away the appropriation of land was still effective. At some stages of social development the importance of appropriation of land, to the appropriators and others, arose entirely from the power which it gave of appropriation of the product of labour. It is the appropriation of land, the power of refusing to allow the 'inferior' people to assume control or make effective use of it, which mainly makes the operation of modern 'plantation' systems possible.

By some inversions of social processes in the modern world the forms and degrees of exploitation have been radically changed. It is suggested, for instance, that British landlords 'keep their estates', that landownership is a luxury, that there is material sacrifice for personal or social ends of a non-material character in the maintenance of agricultural estates. But suggestions of this kind illustrate rather than disguise the fact of effective exploitation elsewhere, for otherwise there would be no means whereby to pay for the luxury of owning land and enjoying the sense of position and power which it still provides. Again, by reason of pressure of farming families on land and of the political exaltation of occupying ownership, there are some cases in which the mortgage creditors are the real exploiters of large agricultural groups.

The chief point at the moment, however, is that it is difficult to obtain any calm consideration of systems of land tenure in relation to technical standards of production in agriculture, in relation to the fundamental economy of production in that industry, or in relation to the social development of agricultural communities as such. Any international discussion of systems of land tenure must be affected by the fact that these systems are still related to forms of the family, to systems of inheritance and disposal of property at death, to governing ideas of political organization, and to systems of government and administration, and last but not least that these systems are still closely related to all the systems and conditions which maintain economic and social differences between classes and are still commonly fundamental to processes of exploitation of human labour. When we add to this the fact that systems of land tenure may be

defended because they are supposed to serve the mystical ends and purposes of a dominant party, or of a State of which the Government represents a special minority, or that a system has been designed to serve these mystical ends, it is not possible to hope for calm investigation in relation to technical, economic, and social aspects of agriculture. Under these circumstances economic philosophy will become either an echo or an implement of policy. In any event it is necessary to remember that consideration of systems of land tenure is likely to be influenced towards criticism or approval because systems or ideas are consistent with or in conflict with the dominant principles and existing systems of political organization and government in given countries. Every system of land tenure must be considered in relation to political evolution and the existing political organization of the State in which it operates. But it may also be considered in relation to modifications in the political organization or general economic organization of any State.

Systems of land tenure, regarded from the property point of view, range from systems of family or blood-group ownership to systems of undivided individual ownership, to systems of divided ownership by individuals; from large-scale to small-scale ownership by individuals—divided or undivided; and from ancient to modern forms of communal and State ownership. Ownership by corporations, such as universities or municipalities, may be regarded as aspects of private or of public ownership according to the character of the corporation itself, but all ownership by corporations other than those existing solely for the production of profits tends to take on some of the characteristics of public ownership.

The fact that in English we use the word 'tenure' rather than proprietorship indicates the importance of divided ownership. The feudal system provides the classic type of divided ownership, but corporation ownership (e.g. ecclesiastical institutions) probably provided the prototypes of modern forms of divided interests. The king disposed of the nation's land, either as representative of the people or by virtue of his divine right, and other individuals held and used land under obligations according to their status. But corporations, especially ecclesiastical, obtained ownership in fee simple and, not being able to use land directly, let it for rents. Again, military conquerors assumed proprietary rights in land but assigned these for permanent tribute, thus holding a fundamental property interest but transferring economic functions of ownership to other persons, and when estates are large the intermediaries, as in parts of India, exploit them through tenants. In some cases this division of property

interests is pushed to extreme lengths and there are numerous intermediaries between the original property owners and the last interest created.

The essential though difficult process is that of distinguishing between interests of the character of *real* and those of *personal* property, or between *possession* and mere *use-occupation*.¹ Where there is distinction between real and personal property as regards inheritance or disposal at death, those rights which are subject to the rules relating to real property may be regarded as property rights, while all others are mere occupation rights which may be extinguished by the death of the holder or may be disposed of or inherited as personal property.

Further, it is necessary to distinguish between tenancies which give the tenant very considerable rights over the land itself and mere use-occupations which have more of the character of arrangements for supply of labour. Generally the share cropper, and often the share-tenant, has no property rights; he has merely a short-period interest in the use of land, which often does not amount to personal property. Their interest is not in land, but in the product of their labour. In the lower ranks of rights and interests in land it is always necessary to distinguish between tenures or tenancies which provide property rights for holders and mere provisions or contracts for supply of labour under which payment is made by the grant of use of land or in the product of the land and labour.

In Great Britain there are two chief forms of these divided interests in property which is agricultural land: the division of interests between the life-tenant and remainder-men under the system of entailing estates; and the division of interests between landlord and tenant. On many estates there is first the division between the life-tenant and the remainder-men and then the division between the life-tenant of property and the agricultural tenant. 'In Scotland the right to make fresh entails ceased in 1914.

Special codes of law and practice have been developed to deal with both sets of divided interests. The Settled Estates Acts make provisions for maintaining and increasing productivity of estates, including those for obtaining credit for improvements.² The Agricultural Holdings Acts together with customs and practices relating

¹ In a short general paper it may be dangerous to use historical or legal terms, but for some purposes the distinction is between *dominium* and *possessio*, or between *allodial* and *feudal* tenure; again between full possession and usufruct possession; or yet again between use-possession and use-occupation.

² See Report of Board of Agriculture on Tithe, Copyhold, &c., Cd. 1519, 1902. Report of Land Division of the Ministry of Agriculture, 1926 (and annual).

to agricultural tenancies provide an elaborate code which regulates relations between landlord and tenant, with some leaning in favour of the tenant.

Family settlements and systems of entail make administration of estates more difficult, tend to conservatism in policy, but on occasions have led to waste and neglect, or to drastic temporary exploitation. Under recent conditions one of the chief effects of family settlements is almost certainly that of making drastic reductions of current incomes of life-holders of agricultural estates, but there is no available measure of the extent of settlements or of their reduction of current net incomes to the nominal life-holders. Possibly nearly two-thirds of the agricultural land of England and Wales is subject to entails, which are not necessarily accompanied by charges on the land for the maintenance of persons other than the life-tenant. Many landowning families have personal property which can be disposed of in favour of females or collateral males or which can be charged with their support, and in these cases the landed property may be freed of interests other than those of the direct remainders or nominees. Amongst agriculturists as such there is no acute sense of any limitation of profitable activity or of neglect of land through the operation of entails and family settlements; but tenants may not always know the causes of conservatism, niggardliness, or neglect in the management of estates. On the other hand, we hear much of the 'burdens on land', land tax, property tax (Schedule A, Income Tax), death duties, &c., and there is no doubt that in some cases the weight of these burdens is increased by family settlements and the necessity of providing for several members of the family other than the life-holder out of the income arising from the land. It might be said that the British agricultural estate system works well just in so far as the possession and control of agricultural land is accompanied by possession of property and control of wealth in other forms. But at the very lowest estimate, the working of the estate organization under systems of family settlements is greatly assisted by possession of wealth in other forms and receipt of income from other sources.

Agricultural properties range in size from single estates of as much as 30,000 acres and scattered estates under one owner amounting to 100,000 acres or more down to a single small farm. Owner-occupiers farm about one-third of the land of England and Wales, but, as this area includes the 'home' farms of landowners as well as the farms of working farmers and those otherwise farming as a main source of livelihood, the proportion farmed by the latter two groups

is considerably smaller. About two-thirds of the land of England and Wales is farmed by tenants.

A considerable change has occurred since pre-War years when only about 12 per cent. of the land was occupied by owners and when the proportion of working farmers who owned their farms was quite small. The change has been due, amongst other causes, to public sentiment against raising rents in periods of prosperity; to the low yield of capital invested in agricultural land; possibly to some loss of economic and social power as a result of the development of the Agricultural Holdings Acts; and some loss of social and political power as a result of other changes in rural districts.

But some other causes were almost as important. There was some increase in ownership-occupation by reason of owners of small estates taking a part or the whole of them in hand for cultivation. This was not always due to loss or lack of tenants. Some of it, at any rate, was due to recognition of the possibilities of profits in farming, but more particularly to recognition of the fact that modern machinery, modern organization, and the development of larger units of enterprise have done a great deal to generalize and simplify the tasks of management. Superior management is now a task that may be undertaken without loss of prestige by the owner of a small estate who wishes to be recognized as of the 'county Society'. Further, land is now played with in the course of changing investments to meet or beat the markets to a much greater extent than is commonly supposed. While the price of land was relatively high and rents low compared with price, and while yield of other investments was comparatively high, there were many sales. With low yield of other securities, with less marked difference between capital value and rent of land, and with apparent certainty of some net yield from land, there has been return to purchase for investment. Tenants have been anxious to buy partly because of contraction of the agricultural area and pressure of farming families on available farms.

But the characteristic system of provision and occupation of land in Great Britain is still one of divided interests—provision by the landlord, occupation by the tenant. The tenant has no *real property* rights in land; his rights have the legal character of *personal property*. Nevertheless, tenants' rights are extensive. It is not uncommon for a tenant's outgoing valuation for improvements, &c., to reach one-sixth of the capital value of the farm, and there are cases where the amount reaches one-fourth. These valuations cover improvements by manuring; by feeding stock; by drainage, fencing and

permanent improvements in land; by improvements of buildings; along with cultivations done and crops sown.¹

The landlord provides the buildings and other permanent equipment and he still exercises some control over cultivations and use of land under agreements and legally recognized customs. In England and Wales probably the greater number of tenant farms are held under year-to-year agreements and only a minority under leases for periods of years. The period of leases is usually for five years, seven years or multiples thereof up to twenty-one years, or for seven years with provisions for renewal at the end of each of two such periods. Agreements from year-to-year run for quite long periods; they are somewhat more flexible as regards rent and some other conditions than leases, and the probability is that the average period of occupancy under year-to-year agreements is somewhat longer than that under leases for terms of years.

The interests of the tenants are protected by leases or agreements, customs of 'the country' (customs of localities), and the provisions of the Agricultural Holdings Acts. The interests of landlords are protected by leases or agreements, the customs of the country, and by the ordinary law of real property. At the lowest, the tenant has the protection afforded by the Agricultural Holdings Acts, which cannot be given away or taken away; but when the agreements or the customs of the country are more generous he takes all the protection which they afford him.

The Agricultural Holdings Acts provide for the tenant (*a*) compensation for improvements, (*b*) freedom of cropping and sale of crops, and (*c*) compensation for disturbance. Freedom of cropping is not complete; there is no freedom of use of land which is taken as permanent pasture; often the land has to be left in the same condition as it is taken, or use must return to a defined rotation in the last year of the tenancy. For acts of husbandry done in the last year of tenancy the tenant must rely on the protection of the custom of the country. Improvements for which the Acts provide compensation may, perhaps, be described in this way:

1. Improvements to which the consent of the landlord is required (improvements of advanced or radical, and permanent, character).
2. Improvements in respect of which notice to landlord is required (permanent improvements which might be made by either owner or tenant in pursuit of a high standard of husbandry).

¹ See Jackson's or Spencer's handbook on the Agricultural Holdings Acts.

3. Improvements in respect of which neither notice nor consent of landlord is required (improvements of short life, mainly following rules of good husbandry).

The custom of the country often goes beyond the provisions of the Acts, and both the Acts and the customs are applied by professional valuers. There are many complaints that tenants are not charged sufficient for dilapidations and that compensation for improvements is too generous to outgoing and too onerous to incoming tenants, although the usual basis of valuation is the assumed value to the incoming tenant.

But in many respects the provision of compensation for disturbance may be regarded as the most important innovation in the law of landlord and tenant made by Great Britain. The conditions of claim for compensation for disturbance are somewhat complex: no compensation is payable in cases of failure to cultivate according to the rules of good husbandry, failure to observe the conditions of agreement, or when the tenant becomes bankrupt or fails to agree to an arbitration on rent, &c. But the provisions for arbitration on rents, together with provisions for compensation for disturbance, do give tenants a high degree of protection. Compensation for loss by disturbance is computed as equal to one year's rent or, if proved to be greater, to the actual sum proved up to a maximum equal to two years' rent of the holding. There cannot now be disturbance on grounds of religion, politics, or personal incompatibility without compensation unless the undesirability of the tenant in these matters is associated with agricultural or financial weakness. This system affords the vast majority of tenants ample protection for the investment of their capital, and all the necessary foundation for religious and civil liberty. The average period of occupation of farms by tenants 1890-1917 was about 15 years,¹ which was as long as that of complete owners of farms in the United States and longer than that of owners of mortgaged farms. As a result of sales of agricultural land and changes in technical and economic conditions, including economic depression, the period has probably become a little shorter. But when it is remembered that the average age at which farmers first assume control of farms (whether as tenants or owners) is 34-35 years and that the average expectation of life after that age is only about 29 years, it will be seen that the average number of occupations per farmer has been rather less than two. It is probable that the average number of occupations per farmer is now two or a

¹ Cf. MacGregor, 'Recent Land Tenure Changes in Mid-Devon', *Economica*, London, November 1934.

fraction more. There are normal variations between occupation of one farm for a complete farming life, of which there are many cases, to serial occupation of 5 or 6 farms over a long farming life. At extremes there are cases of tenancy for five generations (and reports of continued tenancy in one family for 300 years) and occupation of seven or eight farms by one individual. The British system of tenancy seems to provide everything necessary to agricultural and social stability. In respect of rent the system has also been highly flexible—probably much more flexible and adaptable than any system of mortgaged ownership with or without State assistance.

On the whole, the system has provided for a fairly high technical standard of production although no one would claim that it has led to the achievement of the highest technical and economic standards. For the achievement of these standards more capital, more intelligence and enterprise, would have been required throughout the organization of the industry. The landlord system has not provided capital, management, or initiative to the extent required for the use of all economic opportunities. A small minority of the most enterprising farmers, probably, have been discouraged by lack of sufficient protection as tenants, or alternatively by lack of facilities for purchase.¹

Without additional capital for equipment and improvement of farms and without management enterprise in the sphere of ownership, greater progress could not have been achieved. It is at least doubtful whether greater progress would have been achieved under a system of occupying-ownership, for farmers would have been strained to finance purchase of farms and might not have had as much capital for equipment as has in fact been used. In some cases of purchase by individual farmers the restriction of current enterprise by shortage of capital has been obvious, but at some stages efforts towards ownership stimulate enterprise. Again, there is definite possibility that full owners may farm to low standards because the addition of rent to sub-normal profits may enable them to live as well as their neighbours; there is some evidence of this tendency.

In two particulars the British system of tenancy causes surprise to foreign visitors. Tenancy does not carry any social stigma, and amongst farmers farming for a livelihood there is practically no social distinction between owners and tenants as such. General social standing depends on wealth and income, whatever the form

¹ The facilities have been increased since 1928 by the operation of the Agricultural Mortgage Corporation.

of one or the source of the other, education and social habits, and not on anything like status as determined by land tenure. Again, the tenant has complete religious and political liberty if he takes the trouble to exercise it. He may yield respect to the landlord; certainly many landlords are not above using their prestige when they cannot use direct economic power to influence opinion or action; but tenants who value political and religious liberty can exercise it without suffering as farmers and tenants.

There is either a common tendency to assume that systems of land tenure are immutable or a desire to make them such, and this can be seen in judgements of the British system. On the other hand, nothing is clearer than that land tenure has been subject to successive modifications throughout the centuries. One strange fact of history is that Great Britain developed her system of cash tenancy in the period in which other countries were developing their systems of ownership-occupation, while more recently she has been extending ownership amongst farmers when other countries, like the United States, were increasing tenancy. Systems of tenure are subject both to direct manipulation by law and administration and to influencing and moulding by indirect economic and social forces. Every system of tenure has to be considered in relation to other features of economic organization of agriculture which accompany it, like provisions for supply of capital and more particularly for supply of labour. Few if any of the systems of occupying-ownership in the industrial or commercial countries appear to have been self-supporting. Most if not all of them have been supported by tariff protection, special subsidies for production or restriction of production, maintenance allowances for agricultural families, and last but not least State subsidy of provision of mortgage capital or State assumption or annihilation of mortgage debts. On the whole they appear to have needed and enjoyed rather more State protection and assistance than the British system of tenancy.

Still, we are not often willing to recognize that the more political power has to be used to secure the social benefits and advantages of individual property in land, the less is the general advantage of private over public property either to the individual or to the community. 'In proportion as the social benefits (of private ownership of land) are secured by the intensive or frequent applications of public power, the advantages of private property become smaller and the grounds for passing over to public property become stronger.'¹

Indeed, there are many occasions on which men suffer delusions

¹ Ely, *Property and Contract in Relation to Distribution of Wealth*, p. 356.

as to what is and what is not private property firmly established on economic as well as political foundations. Whenever, as in some recent cases, the State uses drastic powers either to maintain or establish private property, that institution and the units concerned are no more stable than the current form of the State itself. When the State uses drastic political powers to establish or maintain individual ownership of farms, the private property in farms takes on some of the character of public property.

There is no finality to any system of land tenure unless there is an end to social evolution or even social change. A country which has settled and begun to cultivate all its land and has covered it with occupying-owners must either arrange that the number of births is proportionate to the existing number of farms, or begin the process of reducing the size of farms, or that of producing on one side a privileged class of owners of land and on the other side a class of landless workers. The sole alternative is the industrial transfer, generally with geographical migration, of any excess population.

On the other hand, a State may bring all its land under public ownership and control, keeping its apportionment and the conditions of occupation for use as fluid as possible subject to the conditions which are necessary for efficiency in contemporary production.

In some countries there can be no stability in the State without a stable system of land tenure, in others there can be no stable system of land tenure without stability in the State. Critics of public ownership will not fail to observe that a strong and ruthless oligarchy may soon turn a system of public ownership into one of private ownership, or into one of class exploitation by means of drawing special tribute.

If land is to be transferred to public ownership and control, the processes of protection of the interests of cultivators, of whatever class, will be transferred from the economic to the political spheres, and the proper functioning of forms of democracy will have vastly increased importance. Exploitation of cultivators may not stop when land is transferred from private to public ownership and State control; it may then only take a different form. Indeed, it is probable that the only ultimate protection from exploitation that the cultivators can secure is that of maintaining the highest possible economic and social mobility—the power to adjust numbers in agriculture and the power to compete for occupation in other industries.

For the mass of cultivators, security is to be obtained through maintenance of full citizenship in the form of political rights and in the more personal forms which come through education and social

training. On the whole, maintenance of full citizenship is rather more important than the achievement of any particular form of land tenure, for effective citizenship will adapt and modify systems of occupation and use of land, and systems of organizing agricultural production, in accordance with changes in the general economic and social environment.

There are two special aspects of the importance of citizenship to agriculturists in relation to tenure of land and organization of production. First, if agricultural progress continues as in the past, agriculturists must constitute a dwindling minority in the total population. Even now they are in a minority in all the progressive nations. Unless the industrial and commercial world is to return to primitive methods, agriculturists must always constitute a minority. If, then, we begin to say that any form of tenure or proprietorship of land is necessary to economic security or to political liberty, it will still be true that only a minority of the people, the agriculturists, can obtain this foundation for security or liberty. The agriculturists, who are in a minority, will scarcely be able to hold these foundations without question. Second, it is very necessary to remember that, amongst the agriculturists, there is even now a very considerable proportion of landless workers. In Great Britain the ratio of employees to farmers is nearly 3 to 1, but parts of other countries would show equal ratios. If individual land tenure, or a particular form of it, is necessary to the security and liberty of farmers, it is equally necessary to that of agricultural workers. While they remain landless there is danger to other occupiers—so long as individual occupation is deemed necessary for economic security. Yet we have previously noted that a country which is now settled can only make new individual occupations by a process of partition, and there are many cases in which partition has gone far enough if not too far already. Although some countries may be able to create new units of occupation, no country can continue this process without suffering from it. Part of the agricultural population has been obliged to rely for security, economic and political, on their power to adjust supply of labour to demand by industrial transfer and migration, and on their rights and powers of citizenship and their political influence.

While the majority of individuals concerned, whether agriculturists or non-agriculturists, are landless, the only safe policy of redistribution or re-allocation of occupation of land is through some form of ownership by the community. There can never be land for all the landless on any basis of individual property in the great modern State; and in Great Britain there can never be land for all

the landless, even amongst agriculturists, on the basis of private property or even individual occupation, except with consequences that are less desirable than those of the present system.

BIBLIOGRAPHY RELATING TO BRITISH (MAINLY ENGLISH)

SECTION OF PAPER

- GARNIER, R. M. *History of English Landed Interest* (2 vols.). Vol. ii. 'Modern'. London, 1892.
- BRODRICK, G. C. *English Land and English Landlords*. London, 1881.
- MARKS, T. E. *Land and the Commonwealth*. London, 1913.
- PROBYN, J. W. *Systems of Land Tenure in Various Countries*. London, 1881.
- SPENCER, A. J. *Agricultural Holdings Act, 1923*. London, 1924.
- JACKSON, T. C. (AGGS, W. H.). *Agricultural Holdings Acts and Tenant Right Valuation*. Sixth Edition. London, 1924.
- BRIGHT, T. *Agricultural Valuer's Assistant*. London, 1910.
- CRAGG, A. R. and MARCHANT, J. R. V. *Hints to Young Valuers*. London, 1897.
- Scottish Land Enquiry Committee. *Scottish Land*. London, 1914.
- Welsh Land Enquiry Committee. *Welsh Land (Rural)*. London, 1914.
- Land Enquiry Committee. *The Land*, Vol. i. Rural (England). London, 1913.
- ADEANE, CHARLES, and SAVILLE, EDWIN. *The Land Report*. London, 1914.
- Liberal Land Committee. *The Land and the Nation* (Rural Report 1923-5). London, 1925.
- DAMPIER-WHETHAM, CECIL. *Politics and the Land*. Cambridge, 1927.
- ORR, JOHN. *Agriculture in Oxfordshire* (Chs. 6 and 7). Oxford, 1916.
- *Agriculture in Berkshire* (Chs. 5 and 6). Oxford, 1918.
- ORWIN, C. S., and PEEL, W. R. *The Tenure of Agricultural Land*. Cambridge, 1925.
- GARDINER, R. S. *The Farmer's Guide to the Ownership of Land* (various editions). London.
- *The Agricultural Landowner's Handbook* (various editions). London.
- FOX, EDGAR. *Memorandum on the Landlord and Tenant Act, 1927*. Surveyors' Institution, London, 1928.
- Ministry of Agriculture. *Report of the Land Division* (Annual). (See especially the *Report for 1926*, pp. 28-43.) H.M. Stationery Office, London.

Recent Legislation

- Law of Property Act, 1922 (12 and 13 Geo. V, Ch. 16).
- Law of Property (Amendment) Act, 1924 (15 Geo. V, Ch. 5).
- Law of Property (Amendment) Act, 1926 (16 and 17 Geo. V, Ch. 11).
- Landlord and Tenant Act, 1927 (17 and 18 Geo. V, Ch. 36).
- Law of Property (Amendment) Act, 1929 (19 Geo. V, Ch. 9).
- Settled Land Act, 1925 (15 Geo. V, Ch. 18).
- Trustee Act, 1925 (15 Geo. V, Ch. 19).
- Land Charges Act, 1925 (15 Geo. V, Ch. 22).

DISCUSSION

J. E. LATTIMER,¹ *MacDonald College, Quebec, Canada*.

The chief feature of the land policy in Canada is the development of the owner-operated farm. This policy is not yet quite a century old. Previous to that time other forms of tenure were experimented

¹ The special subject of this address was 'Land Tenure in Canada'.

with and discarded. Among the systems of tenure given a trial were the well-described and hence fairly familiar seigncurial system; the less well-known quit-rent system adopted in Canada after its establishment in the Eastern States and given up in the State of New York when sheriffs found the collection of the quit-rent too dangerous an occupation; leasehold from the Crown, adopted in Upper Canada, now the province of Ontario, when in 1791 one-seventh of the land had been retained by the Crown as a safeguard in a new region where the tendency was to develop a wild democracy; leasehold from the clergy to whom had been granted one-seventh of the land pursuant to a regulation of the same time; and leasehold from private agencies.

The final step in the evolution of ownership came in Upper Canada, where from 1826 to 1836 almost yearly the elected assembly passed bills requiring the sale of the Clergy Reserves, which were rejected by the appointed Legislative Council, thus causing the deadlock resulting in the Rebellion of 1837-8, the granting of responsible government, and eventually the official abolishment of both the Clergy Reserves and Seigncurial Tenure.¹

Landownership was, from experience, found necessary to ensure improvement of the earlier settled, heavily timbered, eastern area. By the time settlers reached the prairie, promotion of ownership was the accepted land policy.

Methods employed for promoting ownership varied from time to time. In the early days of settlement, land was used for rewarding those who deserved well of the State. Companies, soldiers, United Empire Loyalists, statesmen, and railway builders were included. Fees were exacted in some cases, but by the end of the first quarter of the nineteenth century land sale became general. In 1873 homestead grants, similar to those adopted in the United States a decade earlier, were established. The repeated allowance and withdrawal of the pre-emption privilege shows that authorities were not only anxious to promote ownership but also desirous of finding the most satisfactory size of the unit to be owned. As settlement progressed, land became easier to procure. Homesteads followed land sale and recently bonuses have been given in some sections for breaking new land. These bonuses have been still more recently increased. The increasing ease of securing land may have had some influence on its value, an important point to the farmer where ownership is the prevailing tenure.

This land policy resulted not only in developing in Canada examples of the owner-operator-family-farm, but also, on account of

¹ Grant, W. L., *History of Canada*.

the adaptability of the country, perhaps the best example in the world of what might have been inconceivable to the classical economists, namely, the landlord, labourer, and capitalist in one individual. The type of farming suitable, and the degree of mechanization this permits, allows the owner-operated farm to assume a larger area than in some other regions and requires the operator to be something of a capitalist as well as landlord. The ease of securing land has, up to the present, led to the practical absence of any permanent farm labourer class. The farmer and his family provide the major part of the working force, assisted by farmers' sons and apprentices who hope to enter the business fairly promptly for themselves. Hence the operator is from necessity a labourer as well as a landlord and capitalist.

The system of tenure and the farm organization developed have received some very complimentary remarks from some of those who have viewed them from afar. Viscount Bryce, in his *Modern Democracies*, comments favourably upon the system as a guaranty of political stability; an authority on the subject of land tenure in Argentina suggests for that new country a closer approach to the system prevailing in Canada; and Mr. Conacher, in his comprehensive review of world tenure, seems to regard it rather kindly.¹ The land policy and land tenure of Canada have enjoyed considerable worship at home as well as abroad, possibly on account of the fact that there is elsewhere perhaps nothing just like it. Indeed, landownership is so taken for granted that some companies lease land for grazing subject to sale when required for agriculture. Ownership appears to be the only tenure considered by government land-settlement agencies. This tenure is to be encouraged even if the public has to supply the essential credit; hence farm credit is a phase of land policy of considerable importance where banks are not allowed to loan money on real estate.

It is obvious that ownership was necessary in a new country difficult to improve. It is also clear that ownership was insisted on in order to make sure that any increase in land values would accrue to the operator. It follows that this system of tenure records different results when land prices are rising than when they are falling. It is possible that farmers may be able and willing to dispose of their products at small profit or even at a loss if the expected increase in land values—sometimes termed unearned increment—may be depended on in the long run to recoup such losses. In order to assess

¹ Conacher, H. M., *The Relations of Land Tenure and Agriculture*, Presidential Address, Agricultural Economics Society, Oxford, July 1936.

the merits of such a land policy it is necessary to examine the records of land values.

In the early days of land settlement, the increase in land values was disappointingly slow. The retention by the Crown of one-seventh of the land in Upper Canada was designed to retain a share of the expected increase in land values and maintain a source of revenue. The passing of time revealed that, where timber was unsaleable except when reduced to charcoal and potash, only improved land increased in value, and as ownership was the necessary bribe to ensure improvement the Crown Reserves were promptly sold and eventually the Clergy Reserves.

Increases in land values may have been slow in the early days, yet they were remarkably regular until the rapid settlement of the middle western States of the Union, made possible by a series of inventions, not the least of which was the grain binder, was accompanied by a decrease in land values in the early settled sections of Canada as well as elsewhere. We now know that there were other factors involved in the decline in land values in the last decade and a half of the nineteenth century, but it is interesting to note from a history of a county in Ontario that during this period wheat was fed to live stock on nearly every farm in the county and the collapse of wheat prices and land values was attributed to the introduction of the grain binder. The decline in the value of farm land in Ontario at this time was not recovered until well on in the first decade of the present century.

The twentieth century ushered in a new era of records in land values that must be treated in some detail. Settlement in Canada and development of farms occurred in three main periods: first, the settlement of New France; second, the settlement of the older eastern provinces from 1776 to the middle of the past century; and third, the settlement of the grain-growing provinces occurring chiefly during the present century although proved possible by Lord Selkirk over a century ago. The latest development and expansion was made possible only by the railway facilities afforded. Though transportation was available in some degree after 1885, there was slow development until the present century. Low prices of the last decade of the last century may have deferred new settlement—wheat averaged 67·8 cents per bushel in Ontario for the decade from 1892 to 1901.¹

Higher prices in the first decade of the present century stimulated expansion. In this first decade 171,000 farms were added in round numbers, almost exactly one-third as many as had been previously established. Number of farms is, however, not so important as land

¹ Ontario Department of Agriculture, Statistics Branch, *Annual Report*, 1935, p. 48.

in this discussion. In this decade 46 million acres were added to the 63 millions previously occupied, almost 72 per cent. as much as was occupied during the three previous centuries. The value of land increased from \$1,000 million to \$2,500 million in round numbers. In this decade, with almost three-quarters as much new land added as had previously been occupied, the value per acre of all land increased from \$16 to \$23 per acre. Landownership was a good system for the farm operator during this decade.

From 1911 to 1921 some 29,000 farms were added to the total, 32 million acres to the area, and \$1,182 million to the value of land. The value of land per acre increased from \$23 to \$26, less than half as much as during the previous decade. There are two outstanding points to be noted from the record of this decade. One is that, while the number of farms increased about 4 per cent., the area increased about 30 per cent. The other is that the increase in land values per acre in the decade of the World War was only half the rate that occurred in the previous decade.

The third decade reveals a somewhat different result. From 1921 to 1931 some 17,000 farms were added, area increased by 22 million acres, and the value of land decreased by \$992 million, amounting in 1931 to \$16.60 per acre, \$6 per acre below the figure for 1911 and almost exactly the level of 1901. Ownership was not such a profitable system of tenure for the operator during this decade.

Some decline in land values has occurred since the last census report. Fortunately we have estimates of values per acre including farm buildings annually since 1915 and also for the year 1910. These figures show the record by provinces. Only the eastern provinces reveal any increase in land values (including buildings) in 1935 over 1910. The provinces containing the major portion of the farm land all show a decline in 1935 as compared with 1910. For Canada the decrease in land value with improvements from 1910 to 1935 was from \$33 per acre to \$24, or 27 per cent. The figure shows a rise in 1935 over the previous year of \$1 per acre, some of the central and eastern provinces recording a substantial rise. Prices of farm land since 1931 may be as far out of line as the prices of some other things, but they are the prices that must be considered when discussing land tenure and land policy.

It may be noted that during the past two decades a rather peculiar development has taken place, in that acreage has expanded out of all proportion to the number of farms added. This trend was noticeable during the period from 1911 to 1921 when 32 million acres and 29,000 farms were added, an addition of over 1,000 acres per farm.

It was even more noticeable during the decade following when 22 million acres were added and 17,000 farms, an addition of 1,300 acres per farm. All are aware that there are few thousand-acre farms added. All are equally aware that farms are becoming larger at a fairly rapid rate. Yet what may be of interest and is not yet so well known is the method by which this expansion of area per farm is taking place. The records of the last census make this method clear. The farms operated by the owner are not expanding in area very rapidly. Nor are those operated by tenants expanding in area to any marked degree, though larger farms are frequently leased for obvious reasons. The method of expanding the area of farms recently in vogue is an expansion of the area of those farms classified as partly owned and partly rented.

This movement we should imagine is the most natural method of enlarging the unit under circumstances where and when land values are declining and capital for investment in land hard to obtain. If and when a farm comes into the market for any reason whatever, the most natural solution when sales are not possible may be for a neighbouring farmer to enlarge his holding not by purchase but by renting. The extent to which this has taken place during the period 1921 to 1931 is given in the following table (Table I):

TABLE I. *Owned and Rented Land in Canada*

(Census Reports, 1931.)

	1921	1931
Area occupied farms . acres	140,773,775	163,254,959
owned "	110,649,811	107,184,148
rented "	13,041,194	20,038,878
partly owned, partly rented "	17,082,770	36,031,933
No. of owners No.	615,180	586,299
tenants "	55,948	74,382
part owner, part tenant "	39,962	69,942

From 1921 to 1931 the area partly owned and partly rented increased by 19 million acres, more than doubling in the period. This was the largest increase registered. The area rented by leaseholders only increased by around 50 per cent., while the area occupied by owners decreased slightly. The full area owned and leased must, however, be calculated into this table, as a certain proportion of that classified under partly owned and partly rented falls in each class. From this calculation we find that in round numbers the total area leased, in 1921, amounted to 20 million acres and, in 1931, 37 million acres. The area owned was, in 1921, 120 million acres and, in 1931,

126 million acres. Likewise some calculation must be made in respect to numbers of owners. The number of owners records a decline, the tenants an increase, and the part owners and part tenants a more pronounced increase. By adding the latter group to the owners, the number of owners becomes 655,142 in 1921 and 654,241 in 1931. The increase of 17,000 farms added to the total in the decade and the additional 1,000 here displaced were absorbed by tenants. Recent development is lessening the proportion of ownership. Figures for the whole country give an entirely inadequate picture, as the change has occurred chiefly in certain sections where it has been pronounced. For instance in Alberta the size of the farms partly owned and partly rented increased from 633 to 807 acres, or by 174 acres in the decade 1921 to 1931, while the fully owned farms declined in size from 302 to 291 acres. The leased farms increased from 391 to 493 acres in this interval. In Saskatchewan fully owned farms increased in size by 4 acres, leased farms by 103 acres, and those partly owned partly leased added 129 acres during the decade. These two provinces comprise the section of large farms, the section where this movement was pronounced, and hence the section where leasehold increased. These two provinces comprised in 1931 less than a third of the number of farms but over half of the occupied area, hence what occurs there is of peculiar interest.

It was also in this section of the country that the decrease in land value amounted to the greatest aggregate. The decline of \$992 million in value of land alone would have been severe on less than three-quarters of a million farms, had it been uniform. On account of the larger farms and greater comparative declines, the loss per individual farm was much greater in some areas than others. For instance, land in Saskatchewan lost \$295 million in the decade 1921 to 1931 even while the occupied area increased by 11 million acres, or by one-quarter. This decline amounted to about \$2,300 per farm. In Alberta the area expanded at a more rapid rate, increasing by one-third, the total value of land declining by \$76 million, amounting to some \$800 per farm. In Ontario, where the land area remained practically stationary during this time, the value declined from \$793 million in 1921 to \$586 million in 1931, a decrease of slightly over \$1,000 per farm.

It is clear from the trend during the decade 1921 to 1931 where and why leasehold increased. The area under lease in 1931 varied from less than 5 per cent. in Quebec and all provinces east of Quebec to 13 per cent. in Ontario, 28 in Manitoba, 29.5 in Saskatchewan, and 30.9 in Alberta. Where farms are small in area, ownership persists; where they are larger, leasehold has increased.

The value of land has varied greatly in different provinces from 1931 to 1935. Assuming that the number of farms has not changed materially since 1931, the use of the figures for value of land given by the Dominion Bureau of Statistics in its record of agricultural wealth permits the construction of the following table (Table II):

TABLE II. *Value of Land by Provinces, 1931-5*

(*Monthly Bulletin of Agricultural Statistics*, March 1936, p. 112)

	Number of farms	Value of Land (millions)		Decrease in value per farm
		1931	1935	
		\$	\$	\$
Canada	728,632	2,710	2,323	500
P.E.I.	12,865	23	20	250
N.S.	39,440	39	39	..
N.B.	34,025	38	35	100
Que.	135,957	426	414	90
Ont.	192,174	586	507	400
Man.	54,199	200	179	400
Sask.	136,472	765	649	850
Alta.	97,408	534	405	1,330
B.C.	26,079	98	73	960

The policy of encouraging ownership found necessary from experience still continues. This policy, acceptable and satisfactory when land is increasing in value, has led to increased dependence on public credit in the period of declining land values recently experienced. Hence land policy in Canada is now tied up very closely with farm credit—a question on which time has not permitted any detailed description here.

The system of owner-operation so prevalent in Canada and the northern States of the American Union has been an efficient system not only for settling and improving farm land but also in providing abundance, as almost every one will agree. The owner-operation of large farms—and they are larger in area in Canada than in the United States—is a particularly vulnerable system in a period of abrupt decline of land values. The liability is unlimited. The only diversity of investment is that of the operator being a combination of labourer, capitalist, and landlord. Other businesses have evolved a system of limited liability. If and when hard times ensue, dividends may be decreased, deferred, or omitted, to be resumed when prosperity permits. Not so the business of farming organized on an owner-operator basis. Debts may be deferred but are cumulative, and unlimited liability provides no means of sharing the burden.

Ownership, essential in securing improvement, may not be the most desirable system when that job is accomplished and, on that account, the unit operated larger in area. If owner-operation is considered essential, then its encouragement may require not only extended use of public credit, but also some endeavour to prevent the fluctuations in land values here outlined.

The prosperity of any industry is pretty accurately reflected in the value of the plant. Any endeavour to stabilize land values leads naturally to an endeavour to prevent too wide fluctuations in prices of farm products. Such an attempt was recently made by marketing legislation now declared unconstitutional. The land policy of a century ago had a decided influence in securing responsible government and the development of the constitution. That constitution now exerts a marked influence on agricultural and land policy. Thus we seem to have completed the circle in the last hundred years, though this has been a very inadequate description of the process in the prescribed twenty minutes.

L. DRESCHER,¹ *Berlin, Germany.*

Perhaps it may seem strange that I, a German, should be speaking about problems of land tenure in France, but, as there are no French representatives present, this is probably the best that can be done. It is certainly desirable from the point of view of completeness that French problems should be discussed at this Conference, and the reason why I have been chosen to open this section is that I worked on these problems in France some years ago.

France, as we all know, has always been proud of the way in which her farm lands are distributed. It appears from statistics that about 40 per cent. of all farmers are smallholders, about 50 per cent. are small farmers, and the remaining 10 per cent. are large farmers. As regards the acreage, however, the large farms are predominant, and the smaller farmers hold only about 30 per cent. I abstain from giving more exact figures, as the results of the last Agricultural Census of 1930 have not been published as yet. When, however, we make a critical examination of these statistics, we find that the condition of land distribution as it now exists is not so good as it appears.

We must not conclude from the above statistics that there are not in France, as there are in England and eastern Germany, regions where the large farm predominates. On the contrary, many of the large farms are concentrated in certain regions, notably in the north, and give rise to a local structure very similar to that in England and

¹ The special subject of this address was 'Problems of Land Tenure in France'.

eastern Germany. In spite of unfavourable inheritance laws, the medieval structure has persisted and is little different from what it was in the times of Charlemagne and the Normans. Even in the Middle Ages, Normandy had an exceptional position in the economic life of France. After the conquest of Normandy by the Normans, social and political reforms originated there, which were also carried over to England. The Norman conquerors found in the estates of the Franconian lords a system of landownership which fitted in well with their aims. After the Conquest the old estates were confiscated where the old Franconian lords refused to become vassals of the Norman dukes. In a similar way the estates of the clergy were taken by the conquerors. From the beginning there developed in Normandy and in England a new form of landed property belonging to townsmen. This change of ownership of land was stimulated considerably by the industrial revolution in the eighteenth and nineteenth centuries; a similar development did not come in Germany until much later.

For very different reasons there arose in southern France another area of large farms. At the end of the last century *Phylloxera* devastated the vineyards and most farmers were ruined. The prices of farms fell rapidly, and most of them passed into the hands of townsmen. New vines from America completely restored the vine industry. In a comparatively short time the small peasant farms were replaced by larger farms which are typical nowadays in the plains near the Mediterranean coast. As a consequence of these changes we have one-crop farming and the commercialization of the vine production in these regions.

How typical and frequent the large farms are in southern France is masked by the share-tenancy system. Apparently a number of small farms will be acting independently, but actually they are owned by one man. This form of management is particularly prevalent in some regions of the south-west. As is often the case elsewhere, these large farms are centres of social unrest.

Summarizing, we may conclude that in spite of the inheritance laws of the Code Civil and the increase in number of farm owners to almost double that before the French revolution, old forms of ownership have been preserved. New types, however, have been created.

Another characteristic feature of the French land tenure is the high percentage of tenants and share tenants. Almost one-quarter of all farm operators are tenants, and about 7 per cent. are share tenants. It is worth noting how high is the proportion of tenants and share tenants among the peasant farmers.

Whereas peasant farms are usually, for example in Germany,

owned and operated by the same man, this is not the case in France. Three reasons may be given for this:

1. The inheritance law of the Code Civil.
2. Rural exodus and the decrease of population.
3. The investment of urban money in agriculture.

With regard to the first reason it may be said that the inheritance law of the Code Civil, which emphasizes the principle of equal division of the farm among the heirs, did not introduce a wholly unknown law. Nevertheless, there were regions where the farms passed entirely to one heir and the others were bought off. In these districts the change of regulations caused disturbances.

Up to the present the principle of equal sharing has not been properly carried out. Sometimes exemptions were imperative, and sometimes a division of the farm among the heirs did not seem advisable for natural or social reasons. The simplest way of dividing up a farm among the heirs is to rent it to a tenant or to sell it. In the north, where the large farms prevail, it is not an economic proposition to cut up a large farm and sell the pieces. Frequently it happens that, when the heirs of a peasant farm cannot come to an agreement, they keep it in common ownership and let it.

More important, and more serious, is the depopulation of the land. This favours indirect forms of farming. For instance, if the children of a farmer migrate to a town and have no desire to return, a peasant, as he grows old, will be inclined to rent his farm to a tenant or a share tenant rather than to work the farm himself. There are even cases of a farmer owning a farm but preferring to rent it and work as a farm labourer on a large farm. Among the tenants and share tenants are frequently immigrants from other countries, mainly Italians, whose aim is to acquire eventually a farm of their own.

Finally, the investment of urban money in agriculture, as mentioned above, has perpetuated the tenant and share-tenant system. This effect is not unique in France; it has been observed also in western Germany at the end of last century. The stability of investment in agriculture has always appealed to the French, and there is always a strong demand for peasant farms, even to the point of speculation.

There is another important feature of the land-ownership system in France which must be mentioned, namely, the subdivision of farms. The inheritance law of the Code Civil favours this process, but even in the Middle Ages this feature was already present. The disadvantages of a number of small plots were obvious before the introduction of machines in agriculture, and the peasants themselves had tried to overcome them by recombining the plots. The recent

rural exodus, leading to a scarcity of farm labourers, has compelled the farmers to use machinery. The tendency has been, therefore, to consolidate scattered holdings and plots. In those districts where the flight from the country has been most severe, farms and even villages are deserted. The process of consolidation here is comparatively easy; the plots become larger and the farms bigger. Such a rapid change of balance was not foreseen.

My final remarks are concerned with the interrelation of birth control and rural exodus with the French system of land tenure. It is often claimed that a numerous and healthy land population would result from the settlement of a sufficient number of farmers on the land. The development of an agricultural country like France seems to show that another condition must also be satisfied, because even in those districts of south-western France, mostly favoured by climate and fertility, birth control and land exodus are most pronounced. Possibly the inheritance laws of the Code Civil are responsible for this, but the connexion is difficult to prove. On the contrary it is observed that the highest birth-rates occur in those areas where equal division of land among heirs has been properly carried out. We must conclude that the causes of birth control are too deeply rooted to be explained by superficial facts. The rural depopulation tends to decrease the number of small peasants and to increase the number of larger farmers.

The vacancies in French agriculture caused by depopulation have been filled mainly by Italians and other immigrants. Numerous attempts have been made at land settlement from the densely populated areas of Brittany and the eastern frontier territories to the depopulated areas, but without success. On the other hand, the Italians soon become adapted and, with a little money and much hard work, manage to live in the vacated areas.

The problems briefly discussed here have been forced into the background by other questions more acute at the moment. For the time being it seems more important for French agricultural policy to tackle the problems of surplus production and market control than to reform inheritance laws or to deal with unsatisfied tenants and share tenants. Nevertheless, the security of labourers and the consolidation of farm land are still of urgent importance.

B. H. HIBBARD,¹ *University of Wisconsin, U.S.A.*

When the United States Government was established a century and a half ago we had a most unsettled territory reaching to the Mississippi River, later extended to the Pacific Ocean, making a

¹ The special subject of this address was 'The Trend of Tenancy in U.S.A.'

territory of 3 million square miles, about three-quarters of which was public domain. Three million people were a mere handful on such a vast wilderness. How to settle the land was the first and greatest problem confronting the new government, aside from the mere matter of holding itself together. No other country, possibly no other country at any time in the world's history, ever had so much accessible, desirable land at its disposal at one time, or in one block.

Under the leadership of Alexander Hamilton, Secretary of the Treasury, it was first attempted to sell the land at a cash price, sufficient to bring a considerable revenue into the Treasury. From this plan came little satisfaction to the government, and none to the settler. Not only was the land sold for a dollar or two an acre but, worse yet, it was sold at the seat of government in large tracts. The settler could not afford a trip to the Capital; could not use a large tract; and could not even pay much for the small tract which he desired. This plan did not succeed well or last long, although it came to a gradual, not a sudden, end.

Soon it became manifest that the revenue policy could not succeed. The procedure which followed it was of a *laissez-faire* character. The people made the programme and put it into effect. The government was, of course, a weak one; the frontiersman was vigorous and aggressive. Moreover, the government was wise in giving way to the demands of the prospective settlers. There were dangers both without and within. Other countries were still hoping to possess the Mississippi valley, while our own people were doubtful about the ability of the new government to exercise its authority a thousand miles inland.

Step by step the settlers gained the mastery. They were helped by many friends in Congress and out. The desire for ownership of land was one of the motives which brought men to the New World. This desire was fostered and nourished by the Colonies and grew stronger as settlement spread into the West. Indeed, the prospect of owning land was the loadstone which drew the settlers from the comforts and friends of the established communities, even out into the wilderness. Congress men were eloquent and earnest in their advocacy of cheaper, and finally free, land offered to settlers. These freeholders, the yeomanry, were to become the backbone of the nation, the salt of the earth, the social bedrock, the well-spring and source of purest citizenship, the nursery of patriotism, the palladium of our liberties. Not knowing the full meaning of this last expression, but feeling it was the summation of all that was pure, patriotic, and impressive, the orators and essayists usually ended on that note.

But returning to the prosaic language of the economist it must be admitted that the picturesque and flamboyant language of our earlier politicians and statesmen had a foundation in the thoughts of the early citizens. They wanted land. Not because God had endowed, or cursed, these people with an insatiable hunger for land, but because land was the tempting kind of property then within their reach.

Although required to pay for land at \$2.00, \$1.25, and other similar prices during a period of 75 years, the settler was bound to have free land. Opposition came from two quarters. The East could not bring itself to give up its financial interest in the unsettled lands, and looked upon the settlers who went freely on to the land ahead of surveys of sales as interlopers, trespassers, and outlaws. The other source of opposition was the South, where, on account of the plantation-slave system, the small farmer was neither popular nor dominant.

A forerunner of free land, nevertheless, appeared in the form of a Pre-emption Act, passed in 1841, which gave to the actual settler the first right of purchase. This made the settler secure in his improvements made in advance of the sale at which the land was offered. This Act embodied many features of the Homestead Act, passed about twenty years later and was heralded far and wide as the first Act of its kind passed in any nation within modern times. Land, enough for a farm and the best land the nation afforded, was to be had for virtually nothing, in the amount best suited to the needs of the farmers of the time.

Quite innocently many of our early Congressmen and other public-minded leaders took it for granted that were the American farmers once endowed with land they would retain possession of it indefinitely as operating farmers. True, a few, like Horace Greely, wanted to make it difficult for any one other than an operating farmer to own land, but the means and methods of putting this idea into effect never assumed tangible form.

Owing to circumstances, not design, ownership was distinctly prevalent until well after the middle of the nineteenth century, and, indeed, in many parts of the country at present. However, by 1880 tenancy had become sufficiently conspicuous to attract attention, and an inquiry concerning it was included on the federal census schedules. This census inquiry showed that over a quarter of all farms were operated by tenants. In the South, which means cotton, 36 farms out of 100 were owned by one group and worked by another. In the North tenancy was just short of one in five—quite evenly spread with the exception of being distinctly low in New England. The Middle West had not yet struck its stride.

From 1880 to 1900 it appeared that tenancy was assuming definite form in the way of a trend, and the aspect was ominous. Everywhere ownership declined, tenancy gained. Out of the 48 States every one showed this tendency, with a single exception which showed an almost imperceptible change in the opposite direction, involving an insignificant number of farms. The prognosis was unfavourable, perhaps doubly so, since not only was tenancy on the increase, rising from 25 to 35 per cent., but worse yet the share tenancy, betokening a partnership, probably a friendly interest on the part of a landlord in his tenant, was giving way to cash tenancy, which in turn presumably meant absenteeism, the cold cash nexus, depleted soil, and trouble. Thus in our statistical simplicity, based on plain understandable figures, computed and manipulated through the use of pencil and paper, augmented and scheduled by adding machines, did we interpret the facts and predict the future. No one doubted the trend, and the outcome looked black.

Ten years later came the first real jolt in the reckoning. Thirteen north-eastern States showed a gain in ownership and a decline in tenancy. Eleven mountain and Pacific States, as a group, also showed positive changes in the same direction. The Middle West recorded very small gains in tenancy. In fact, for the whole country, excepting the South, there was a slight gain in ownership. The South reported a positive, though moderate, gain in tenancy, reaching the middle mark of 50 per cent. Not only was there an apparent check in the advance of tenancy, but the character of it was found to have undergone a decisive change; share tenancy had, to a great extent, displaced cash.

Explanations were not wanting. In the North-East ownership had gained because of the prosperity of the farmer, favoured as it was by a relatively low value of land per acre and the small average size of farms, thus keeping the total investment within the reach of a comparatively young farmer of modest means. In addition to this important basic fact it was to be noted that the character of the agriculture of the eastern States was such that it could not well flourish in the hands of tenants. In general this seems to have been the case. Much fruit was grown, and this type of agriculture is never associated with any considerable degree of tenancy. The production of many other highly specialized crops requiring constant and perennial attention, but without a heavy investment in land, tended to promote ownership. To these facts should be added at least one more—the purchase by many city people of homes in the country, to be occupied for the whole or any part of the year, but with enough

productive land to permit the property to be rated for census purposes as a farm.

In the Middle West and the West there still remained the influence of our great public domain. Many thousands of new farms, recently acquired through the Homestead Act, were held by farmers, or often by pseudo-farmers, swelling the numbers of owned farms. Since titles to such farms are not issued within three, or five, years following the beginning of the required residence period, the occupier is of necessity the owner.

There was, however, a more substantial and more general reason why tenancy gained little in the Middle West during some twenty years preceding the Great War. This was a period of prosperity and, although there was some increase in tenancy as a whole, it looked as though many States were perhaps reaching a normal, and one not alarmingly high. For example, the East-North Central States as a group showed about 28 per cent. of rented farms, only 2 points higher than twenty years earlier. The South showed a 3-point advance and reached 50 per cent. Since we expected an advance in the South and attributed it largely, but not by any means correctly, to the presence of so many negroes, the ominous cast to the picture appeared in connexion with increases in several important West-North Central States, such as Iowa, Nebraska, South Dakota, and Kansas.

Since the War, i.e. 1920, important, and not happy, changes have been in progress. In the South tenancy increased as never before and on a base already high, rising from 50 to 56 per cent., one big section reaching 62 per cent., wellnigh two farms out of every three. Eight States, comprising the leading cotton-growing region of the South, ranged from 61 to 72 per cent. of tenancy. It looked as though landowning farmers were to disappear from the State. Still further increases were recorded in the Central West, mainly to the west of the Mississippi.

With the census of 1935 came another surprise. Not only did tenancy fail to advance as was generally expected, but the distribution of the change was new in nature. Virtually the whole South showed a decrease; the North a moderate increase. Iowa, in the heart of the corn belt, reached the 50 per cent. mark, with Nebraska and South Dakota barely below it. The Eastern States (13), which for thirty years had shown a constant decrease, had started upward again. The country as a whole showed a very small decrease.

Why these remarkable changes? In the North-West the increases appear to be due largely to bankruptcy. The States with the largest number of involuntary sales showed the greatest increases in ten-

ancy. As seen in the contrast between the West-North Central States and the East-North Central, such sales had been only about half as frequent in the latter group.

In the South (13 States) tenancy declined between 1930 and 1935, the first time that such a change has occurred in half a century. What has brought this to pass is not shown directly in the census reports. Until further and more detailed facts are available one must go cautiously in offering explanations. This decline is in spite of forced sales being just about as numerous relatively as in the North-West. In looking for the causes one is bound to take into consideration the decreased acreage in cotton. The total number of farms for the nation increased by 6 per cent. in the South. It would appear that many farm owners who have been living in a town have gone back to their farms, automatically forcing the tenant off. However, there are some incidental facts of real social significance furnished by the census reports. The negro tenants have decreased by 15 per cent., while the white tenants have shown an increase of 4 per cent. It would appear to be a case of the survival of the fittest.

Whereas the owners have presumably moved back to their farms because as landlords they were getting so little, it may be inferred that tenants have, where possible, drifted into the cities and towns where relief is more easily available than in the country. Should reduction in cotton acreage continue, it is clear that more profound social changes in the cotton district are in store for us than have occurred since the Civil War.

C. IHRIG, *Budapest, Hungary.*

Professor Ashby discussed in his paper mainly land tenancy. Professor Sering called our attention to the fact that in other European countries the greater part of the land is farmed by the owners themselves. In some of these countries the most adequate distribution of land between large and small holders is the chief problem, and connected with it is the question, in what way does it influence the economic and social development.

But the question may also be examined from the reverse side: What is the influence of economic and social conditions on the land tenure? This question is, in spite of its being just as important, not so often put as the other. There are countries where the distribution of land seems to be rather obsolete, because estates farmed on a large scale prevail compared with the small ones. And although in these countries too there is a constant increase of the area covered by small holdings, the development is by no means satisfactory for

those who regard the land policy with a bias for the situation and development in their own country.

The economic and social system of a country forms a unit, the parts of which must be in harmony, like those of the human organism. Each branch of this economic unit can be developed according to some premeditated aim, but only as far as the general development permits. It is certainly one of the greatest mistakes to overlook the situation from which one starts, when deciding on the measures of economic policy. If, therefore, in a given country history has produced a relative significance of the large estates, a sudden alteration of land distribution is impossible or at least involves great risk, except in the case of special circumstances.

I want to call your attention to some economic and social reasons which prevent a rapid increase of small holdings. If we take a certain area, let us say 1,000 acres, a certain amount of capital is needed for its most profitable management. If the same area is used by ten farmers, each of whom holds 100 acres, the capital needed by them altogether is certainly more than in the former case where it was under one management. If, therefore, we convert a considerable part of the large estates in a given country to small ones, we must furnish the extra capital needed. If the country cannot provide it, it cannot equip the new small holdings with proper capital; the small holdings cannot be run with a proper profit, and their yield taken altogether is less than it was under the former management; so a fall in the national income is almost inevitable.

There is also another economic obstacle. A large-scale farm represents a certain bargaining power in obtaining credit or in purchasing requirements or in selling on the market. A large number of small farms, when isolated, possess certainly a much less bargaining power. That means that their income taken altogether is less than that of a large farm, provided that in both cases the ability of the respective farmers is equal. Therefore, if the large estates of a country are to be divided into small holdings, care must be taken to create such organizations as will give the same bargaining power to the newly created small farms as the large ones had. I am referring here to co-operative credit, purchasing, and marketing societies; they form an indispensable adjunct to small farming units. Experience has taught us that a co-operative organization cannot be created within a few years without running the risk of complete failure. So, where co-operation has not attained a certain stage of development, the creation of a great number of small farms has just the same risk as sending inexperienced children to do shopping.

These are the main economic questions to be considered very carefully before starting a land reform. From the social side there are two conditions which I should like to emphasize. One of them is education. Not everybody earning his livelihood in agriculture is able to run his own farm. He may be a very good labourer, but who knows beforehand whether he will become as good an independent farmer as he was an employee of a good employer? Certainly education helps in this respect; but this again needs time before it can bring forth the necessary number of well educated farmers. The results depend not on the efforts of the State alone. They depend also on the will of the farming people, and it is an almost general experience that there are more opportunities for education than farmers ever use.

But it is not education alone which decides the ability of the farmer. His capacity for organization and business must be taken into consideration as well. In this respect sons of farmers certainly are to be preferred to the labourers, at least generally. But here again we have two obstacles: the first is the social point of view which requires that, in the main, land must be given to those who have none at all, that is, to the labourer; the second is the question whether there is a sufficient number of sons of farmers in a country where there are relatively few small farmers. It is certainly useless to create new farming units which cannot stand competition and sooner or later fail, compelling their owners to look for a type of employment which becomes difficult to get owing to the fact that large-scale farmer employers have disappeared.

All these economic and social conditions, of which I have enumerated only the most important, determine the speed at which land policy can be carried out. It is certainly possible to leave them unnoticed and alter the distribution of land entirely within a few years. But this is revolution in agriculture. And revolutions, whether political or economic, always cost a lot of money, which somebody must pay. The costs of some large-scale land reforms in the post-War period were placed on the shoulders of the large owners. But this was only possible because the agricultural revolution was connected with a political one, and the racial difference between the possessing and non-possessing classes of agricultural population facilitated the solution of the financial question. But one cannot take the same measures in a country where the 'haves' and 'have-nots' belong to the same nationality.

In the normal case the charges connected with land reform must be taken over by the community. These costs are heavy, even when

there is no revolution and the land policy follows an evolutionary course. There is the temporary fall of the yield on the area affected by the land-policy measures. (At this point we must just touch in passing on the difference existing between those countries where the large estates are rented to small tenants, and those where they are farmed on the large landowner's own account; in the former it is certainly easier to declare that as from to-morrow the tenant enters into the possession of the land cultivated by him than it is in the latter case to create entirely new farming units.) But supposing that the general level of yield does not decline, there are still costs. There is the compensation for the former owner; there is the new equipment of the new owners; there are the costs of the administration, &c. If the former landowner is not made to pay, the community must. The community consists of two parts: those earning in agriculture and those earning in the other branches of economic life, particularly in industry. Now there is a great difference again whether it is on industry or on agriculture that the economic prosperity of the country is based. If, as in pre-war Germany or present-day England, there is a strong industry which can easily bear these costs, it is clear that a land policy in favour of small holdings is carried out much more easily than in a country where industry cannot be charged with this burden or at least cannot furnish the necessary capital for agricultural loans.

In concluding my brief observations, I should not like to be misunderstood. I do not want by any means to claim that, under the conditions just sketched, it is not the duty of the State to make every effort to achieve the most democratic distribution of land possible, and certainly there are ways of increasing the number of small holdings in an economic way even under the above-mentioned circumstances. What I want to emphasize is only this; the framework of land policy is to some extent determined by economic and social conditions which we cannot alter from one day to the other. A sound economic and social policy must be adapted always to these possibilities. In the same way anybody who wants to form an opinion on the land policy of a given country must be acquainted with its conditions.

GEORGE DALLAS, *Wellingborough, England.*

I have been very much impressed, as I am sure all of us have been, with the papers that have been read, and particularly with the papers this morning by Professor Ashby and Professor Sering. I, with others, shall await with very great interest the full translation of

Professor Sering's paper so that I may be able to give it the full and complete study that it deserves; I am certain that it will be very much to our advantage. But I want to congratulate Professor Ashby on his paper this morning, as being one of the most exhaustive in our country on land tenure, and I want to say that I hope that that paper will have a wider audience and circulation than even the members of this august association. I was very much struck with his final conclusion, namely, that public ownership in this country is the best form of land tenure. This is borne out by the facts of the case.

In recent years we have had very great lamentations from the land-owning class in this country that the owning of lands is not a profitable undertaking. They have been complaining that it is impossible to get, at the best, anything more than a very small return on the capital outlay and expenditure; that in many cases it is completely impossible to get any return whatever; and that in some cases they have a considerable adverse balance. This has compelled them, in their language, to call upon the State to help them, because the capital value of farming land in recent years has undoubtedly been steadily depreciated. One has only to look at the untrimmed and uncut hedges, the uncleared ditches, the choked drains, the lack of drainage, and the dilapidated farm buildings to see that depreciation has been taking place in recent times. Now, they have undoubtedly had considerable help given. It is of great interest to note that many of our best informed and ablest agricultural statesmen have called attention to what must inevitably be the result of State help and State expenditure in this way. Lord Ernle, who is well known as one of the greatest of our authorities on agriculture in this country and who was our Agricultural Minister during the War period, in the last chapter of the last edition of his book, *English Farming, Past and Present*, states that State help in the form of grants for drainage and other things cannot continue without the State entering upon control in some form or other of the land of the country. And later still, Lord Halifax, the Lord Privy Seal, laid it down, when he was the Honourable Edward Wood and Minister of Agriculture, that if this State help was going to go on he could visualize (and this is some 10 or 12 years ago) that it would end by way of a revolution in the ultimate nationalization of the agricultural land of the country. It is also well known to all of you here that Mr. Orwin of Oxford has in recent years come out very definitely in favour of the nationalization and complete community control of agricultural land.

So far I have been dealing with the facts and the project as referring to landlords who probably have been struggling financially to do

their very best with the land that they own, but there are other types of landowners. Lord Bledisloe, another great agricultural authority in this country and for some time Parliamentary Secretary for Agriculture, delivered an address to the British Association some years ago, in which he pointed out clearly and distinctly that there were very many landowners in this country who by lack of knowledge and experience, and possibly the will, were quite unfitted for the job of estate and land management and, therefore, were not of any value whatever to the agricultural community.

There are other reasons as well, social and political reasons, why public control and public ownership should in this country be the form of land tenure. In many districts, both in Scotland and in England, the feudal system still exists. Ownership of land gives a greater social prestige than ownership of any other form of capital, and ownership of land in the rural areas gives large authority and power of dominion over the lives and destinies of the people who live in these areas. Therefore, from the social point of view, it is necessary that that power should be taken away and that it should disappear altogether. The private ownership of land, as a system of land tenure, has completely broken down in this country, and we are gradually—maybe political circumstances will accentuate the speed of the process—but we are certainly gradually moving on to greater public control and, I think, in the end public ownership; and, so far as the best of the sociologists and the best of the economists are concerned, this system is undoubtedly the best form of ownership of agricultural land in Great Britain.

•

MINUTE OF GROUP MEETING TO DISCUSS RESEARCH ON LAND TENURE

At a meeting held to discuss the land tenure research projects, Dr. Sering gave a brief account of the position with regard to the investigations into systems of land tenure, more correctly into the social and economic constitution of the rural population in the various countries concerned. These investigations had been inaugurated by the Third Conference at Bad Eilsen. Detailed reports were presented to the Conference by Switzerland,¹ Bulgaria,² Hungary,³ and (with a slight modification of the subject) Great Britain.⁴ The report on Yugoslavia⁵ was still in the press when the Conference met. Preliminary reports had been sent from Denmark,⁶ Norway,⁷ and the United States of America.⁸ The research work was advancing in Germany, Austria, Italy, and Canada, and was being prepared in Sweden, Poland, Czechoslovakia, and by the Ibero-American Group. It was hoped that all other important countries would follow.

Going on to the scope and methods of the investigations, Dr. Sering referred to the outlines sent out to the correspondents in the various countries and to all other persons concerned with the investigations. Having looked through the volumes ready so far, he begged to draw attention to the following points in the drafting of reports:

As the agrarian constitution, though the foundation, is only a part of the general social and economic structure, a general survey must be given of the occupational and social structure of the population as a whole, and of the parts played by agriculture, industry, and trade, &c. in the national community and economy.

The investigations have to be centred in the present state of things, but a knowledge of the historical development is indispensable, so that the modern constitution can really be understood. For old as for new-settled countries it is equally desirable to get a knowledge of the motives which guided the men who created or transformed the agrarian constitution. In old-settled countries, the authors cannot be expected to do research work of their own in this regard; they will therefore be concerned mainly with giving a summary of the results of the investigations hitherto made into economic and social history. For new-settled countries, stress must be laid on the motives of the land settlement policy, for instance in U.S.A., Canada, Australia, South Africa. It would, however, be most desirable that the investigation should go back to the origins of European settlement in those countries, e.g. for U.S.A., in New

¹⁻⁸ Numbers refer to list of publications appended to this minute.

England and Pennsylvania; for Canada, in the French Colonies on the St. Lawrence River.

Besides the leading political and social ideas, the natural conditions, soil and climate, and further the origin, the race, and the traditions of the settlers should be treated of.

On the other side, the social, economic, and biological effects of the land-tenure system are to be examined.

As to the economic conditions and effects, it would be a mistake to give a full encyclopaedia of the agriculture in any country. It is sufficient to describe the most important types of farming in the various regions.

The social side of agriculture must clearly be set in the foreground, as it has been sketched in the outlines:

Distribution of the land; size of farms and properties—mode of tenure and working conditions—the question how far capitalistic dependence is penetrating agriculture in the forms of indebtedness and expansion of tenant farming—critical review of the social reforms induced in most countries by the agricultural crisis.

LIST OF PUBLICATIONS

1. G. HOWALD u. H. BRUGGER. *Grundzüge der schweizerischen Agrarverfassung*. Berlin, 1936.
2. J. St. MOLLOFF u.a. *Die sozialökonomische Struktur der bulgarischen Landwirtschaft*. Berlin, 1936.
3. *The Agricultural Organization of Hungary*, published by the International Committee of the Ignatius Daranyi Society of Agricultural Science as the Hungarian Group, International Conference of Agricultural Economists.
4. *Regional Types of British Agriculture*, edited by John P. Maxton. London, 1936.
5. O. VON FRANGEŠ. *Die sozialökonomische Struktur der jugoslawischen Landwirtschaft*. Berlin, 1936.
6. O. H. LARSEN. *Brugsstørrelse, Besiddelsesmaade og Arbejdsforhold i det Danske Landbrug* (not published).
7. P. BORGEDAL and O. HOGNA. *Size of Holdings, Mode of Tenure and Working Conditions in Norwegian Agriculture* (not published).
8. O. E. BAKER and J. G. MADDOX. *The Changing Agriculture of the United States* (not published).

THE PROVISION OF AGRICULTURAL CREDIT

FARM CREDIT IN THE UNITED STATES

F. F. HILL

Deputy-Governor, Farm Credit Administration, Washington, D.C., U.S.A.

THE Farm Credit Administration was created by Executive Order of the President, effective May 27, 1933. The purpose was to bring together under one administration all Federal agencies dealing primarily with farm credit. Prior to the creation of the Farm Credit Administration four separate government departments or offices shared the control or supervision of existing facilities set up to finance agriculture.

Certain of the credit institutions and agencies which became a part of, or were placed under the supervision of, the Farm Credit Administration were permanent in character and had been in existence for years. The Federal land banks, which make long-term loans on farm mortgage security, have been in operation since 1917. The Federal intermediate credit banks, which may be thought of as agricultural banks of discount, were established in 1923. Other agencies placed under the Farm Credit Administration were temporary in character, arising largely out of the depression.

In addition to the five or six Federal agencies or groups of credit institutions that were brought together under single administrative control, two new groups of institutions, intended to be permanent and to round out the credit service available to agriculture, were established under authority of the Farm Credit Act of 1933. I shall refer to these credit units later on.

The object of bringing together under one administration the various Federal agencies having to do with farm credit was to eliminate overlapping, to prevent duplication, to resolve conflicting jurisdictions; in short, to provide a better credit service for agriculture at lower cost.

The newly created Farm Credit Administration was given two tasks. One was the emergency job of stopping wholesale foreclosures in the spring of 1933 through attempting to refinance the debts of farmers on a basis that would permit them to pay out as conditions improve. The second task was that of attempting to build, on a permanent basis, a complete co-ordinated credit system

for agriculture designed to meet, at all times, the sound credit requirements of the farming industry on terms suited to its needs and at the lowest possible cost.

I should like to deal very briefly with the emergency refinancing programme, then attempt to present a picture of what we in the Farm Credit Administration think of as the permanent programme, and conclude with a brief discussion of two or three of the major problems which the Farm Credit Administration faces at the present time or is likely to face in the near future.

I need not recite, before a group such as this, conditions that existed in the United States in the spring of 1933. Thousands of farmers had lost their homes through foreclosure. Additional thousands, through no fault of their own, faced the same prospect. As previously stated, the first task with which the newly created Farm Credit Administration was confronted in the spring of 1933 was that of attempting to stop wholesale foreclosure by refinancing debt-burdened farmers on a basis such that they would have a reasonable opportunity of working out as conditions improved. Existing machinery was used to carry out the job. In general, the procedure was for a Federal land bank to make a conservative first mortgage loan on the usual basis and for the Government to make a second mortgage loan in an amount such that the second mortgage plus all prior liens did not exceed 75 per cent. of the so-called 'normal value' of the farm.¹ Normal value is interpreted to mean the value that can be sustained by earning power with normal prices. Up to the present time, prices obtained by farmers during the five pre-War years, 1910-14, have been used as the estimate of normal, adjusted of course in the case of certain products for shifts in production and changes in demand.

The total loan made to any one farmer could not exceed 75 per cent. of the appraised normal value of the farm, and it was required, before the loan could be closed, that the farmer's debts be composed within that amount. No compulsory scale-down of debts was involved. If the borrower's debts exceeded 75 per cent. of the normal value of his farm, his creditors had the choice of scaling down their claims or of continuing to carry him. Since a market for real estate could scarcely be said to exist, there was little opportunity, in most instances, of recovering a greater amount through foreclosure and the sale of the security than through accepting the loan offered by

¹ In certain areas and on certain types of farms where the security was not such as to be acceptable for a Federal land bank loan, first mortgage loans were made from Government funds.

the Farm Credit Administration. Furthermore, foreclosure as a means of collecting debts, which in a great many instances farmers were unable to pay through no fault of their own, was not looked upon with favour in most communities.

Nearly 80 per cent. of all loans were closed in amounts sufficient to pay all creditors in full. The remaining 20 per cent. of the loans closed involved scale-downs. In instances where scale-downs were involved the amount of the scale-down averaged approximately 25 per cent. of the prior debt. It is estimated that scale-downs in connexion with loans refinanced through the Farm Credit Administration alone have exceeded \$200 million. The volume of scale-downs resulting from debt compositions where the Farm Credit Administration was not an interested party is unknown, although the figure must be a relatively large one. Several hundred counties had voluntary debt adjustment committees which assisted in working out settlements between farmers with impossible debt burdens and the creditors of such farmers. These local committees, functioning solely in the role of disinterested mediators and without legal authority to force a settlement of any kind, assisted thousands of farmers and their creditors in working out arrangements satisfactory to both parties. All such settlements did not, of course, involve a reduction of the principal sum. In many instances interest rates were temporarily reduced, past-due interest was written off, or principal payments were postponed or amortised over a longer period of time in order to afford relief.

To indicate the size of the operation I might say that over 1 million applications were received for mortgage loans for refinancing purposes, aggregating something over \$4,000 million. During the period from May 1, 1933, to December 31, 1935, which covers the greater part of what may be said to be the emergency period, 725,800 loans were closed on nearly half a million farms for approximately \$1,940 million. This is the equivalent of a loan on one farm out of approximately every 14 farms in the country. Of the \$1,940 million loaned, approximately 58 per cent. was loaned by the Federal land banks and 42 per cent. by the Government.

The majority of the first mortgage refinancing loans made by the Federal land banks were for periods of from 20 to 35 years, averaging approximately 30 years. The majority of second mortgage loans made from Government funds were for a 13-year period. Many of the latter loans undoubtedly will have to be reamortised over a longer period to enable the farmer to work out. Refinancing farm debts, including first mortgages held by individuals and private

lending institutions, on a long-term amortised basis in itself afforded a considerable measure of relief since, unlike Europe, the common practice in the United States has been to make mortgage loans even for capital improvements or the purchase of farm property for periods of from 3 to 5 years. Under ordinary circumstances, of course, such loans are renewed at maturity. However, in periods of agricultural depression they place many farmers in a position where they have large obligations due and payable which they cannot possibly hope to meet from current earnings.

Interest on the refinancing mortgage loans made by the Government was charged at the rate of 5 per cent. Up until the spring of 1935, Federal land bank loans were also written at 5 per cent. In April 1935, as a result of the general decline in interest rates which enabled the banks to sell $3\frac{1}{2}$ per cent. bonds, the contract rate on Federal land bank loans was reduced to $4\frac{1}{2}$ per cent. It was reduced to 4 per cent. on June 24, 1935, when the rate on farm loan bonds dropped to 3 per cent. This is the contract rate at the present time. However, Federal land bank borrowers have enjoyed the benefits of a temporarily reduced interest rate made possible through the appropriation of Government funds for this specific purpose. At the present time Federal land bank borrowers are paying only $3\frac{1}{2}$ per cent. interest on their loans regardless of the contract rate called for in the mortgage. Under present law this interest subsidy will be discontinued from July 1, 1937.

Permanent annual interest savings to the farmers of the country resulting from the refinancing, at 5 per cent. or less, of debts bearing an average interest rate in excess of 6 per cent. is estimated at \$38 million. Temporary interest reductions, made possible by Government subsidies, bring the total interest saving during the year ended June 30, 1936, up to \$74 million.

The question naturally arises as to the ultimate results of these refinancing operations. Will farmers be able to pay out? Can the average farmer repay a loan equal to 75 per cent. of the appraised value of his farm? The answer as to whether the average farmer can or cannot pay out will depend primarily, of course, on the future course of prices. At the present time the index of farm prices is approximately 7 per cent. above the 1910-14 level used as a basis in making loans. A further favourable factor in the situation is the reduced interest rate the farmer has to pay and the fact that his debts have been consolidated and amortised on a long-term basis. Furthermore, with the establishment of a permanent production credit system, the purpose of which is to make production credit available

to agriculture at the lowest possible cost, it appears probable that interest charges on short- and intermediate-term loans will be kept below former levels. At the present time, for example, production credit associations are making loans at 5 per cent., the lowest rate ever made generally available in the United States for loans of this type. Savings from this source will be available to assist in carrying mortgage debt.

As an indication of the improvement in the farmer's paying ability during the past three years, it is noted that, whereas at the end of 1932 52.6 per cent. of all Federal land bank borrowers were in default, 75 per cent. of all borrowers had paid all of the matured instalments on their loans as of June 30, 1936. If to this group are added those borrowers who have been granted an extension of time under a definite extension agreement and whose extensions are in good standing at the present time, 83.5 per cent. of all Federal land bank borrowers may be said to be current.

As of June 30, 1936, 86.2 per cent. of all interest which had matured on the refinancing loans made by the Government had been paid.

In addition to the emergency refinancing of farmers' debts through making loans on farm mortgage security, other important emergency measures were also undertaken. A considerable volume, both in number and amount, of emergency short- and intermediate-term loans was made to farmers and stockmen from Government funds to enable them to maintain foundation herds and to plant crops in order that with improved conditions they could once more become self-supporting members of the farming community. However, time does not permit of even a brief review of these operations.

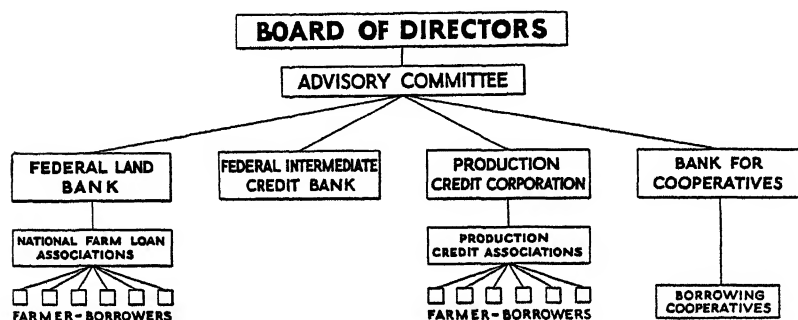
The second task assigned to the Farm Credit Administration was that of building a complete co-ordinated credit system for agriculture. Before discussing present objectives, policies, and problems, it might be well to describe briefly the mechanics of the organization.

For administrative purposes the United States is divided into 12 districts. In each district there is a Federal land bank and a varying number of local national farm loan associations—an average of nearly two associations to every agricultural county in the country—which together comprise a system for providing farmers with long-term farm mortgage credit. There is a Federal intermediate credit bank, a production credit corporation, and a number of local production credit associations—an average of one association to approximately five agricultural counties—which together comprise a short- and intermediate-term production credit system. A bank for

co-operatives providing commodity loans, working capital loans, and physical facility loans to farmers' co-operative marketing and purchasing associations completes the district set-up (Fig. 1). In addition to the 12 district banks for co-operatives, there is a Central Bank in Washington which makes loans to large regional and national co-operatives.

The Federal land banks, which have been in operation since 1917, make loans on first mortgages on farm real estate in amounts which

FIG. 1. FARM CREDIT ADMINISTRATION. DISTRICT ORGANIZATION



may not exceed 50 per cent. of the appraised value of the land plus 20 per cent. of the appraised value of the permanent improvements. With certain exceptions all loans are made through and are endorsed by local associations of borrowers known as national farm loan associations.

The original capital of the Federal land banks was provided by the Government. However, provision was made whereby borrowers obtaining loans are required to purchase capital stock in the system to an amount equal to 5 per cent. of such loans. As farmer-borrowers purchased stock in the system, Government capital was gradually retired until by 1932 the system was completely owned by farmer-borrowers. In that year, however, as a result of factors growing out of the depression, the Government was forced to come to the assistance of the banks and subscribe \$125 million of additional capital. Provision is made whereby this capital, like the initial Government subscription, may be retired at such time as the banks are in a position to do so. At the time a borrower's loan is repaid in full, his capital stock is retired at par provided it has not become impaired as a result of losses incurred by his local association on loans made by the

Federal land bank which it has endorsed. If losses have occurred, the borrower may receive, at the time he repays his loan in full, no part or perhaps only a fraction of his original capital stock investment.

Funds for making Federal land bank loans are obtained ordinarily from the sale of bonds to the investing public. However, during the height of emergency refinancing operations the banks made loans in such volume that it was impossible, particularly in view of unsettled conditions in the money-markets, to sell bonds in sufficient amounts to meet their requirements. As a result it was necessary for the Government to buy Federal land bank bonds in considerable volume. These bonds, which are not guaranteed in any way by the Government although they have certain tax exemption features, are currently quoted at substantial premiums.

The interest rate paid by Federal land bank borrowers represents the cost of funds to the banks, as reflected in the interest rate on the last preceding issue of farm loan bonds plus a 1 per cent. margin to provide for operating expenses, losses, and reserves. At present the banks are selling 3 per cent. bonds and making 4 per cent. loans.

As of June 30, 1936, the banks held mortgage loans to the amount of approximately \$2,053,149,000. This is equal to 26.4 per cent. of the estimated farm mortgage debt of the country.

The Federal intermediate credit banks, established in 1923, and the production credit corporations and production credit associations, established during 1933 and 1934, together comprise a short- and intermediate-term production credit system for agriculture. The Federal intermediate credit banks may be thought of as Government-owned agricultural banks of discount. The function of the production credit corporations is to organize, partially to capitalize, and to supervise local production credit associations. Production credit associations are local associations of farmer-borrowers which make loans to farmers and stockmen for agricultural purposes, endorse the paper, and discount it with the Federal intermediate credit bank.

As in the case of the Federal land banks, the initial capital required to establish production credit associations was provided by the Government, in this instance through the production credit corporations. As in the case of the Federal land banks, the borrower is required to own capital stock in a local credit association (production credit association in this instance) to an amount approximately equal to 5 per cent. of his loan, and if losses are incurred by his association he may lose all or a part of his capital investment. When his loan is paid in full he may not, however, withdraw his capital investment,

although he may, if he does not borrow for a two-year period, transfer it into preferred stock. Provision is made for the retirement of the Government-owned stock at such time as the associations may be in a financial position to do so. All the capital stock of the Federal intermediate credit banks is owned by the Federal Government.

Loan funds are obtained by production credit associations through discounting farmers' notes with the Federal intermediate credit banks. The Federal intermediate credit banks, in turn, obtain their loan funds through the sale of collateral trust debentures to the investing public. These debentures, while exempt from certain taxes, are not guaranteed in any way by the Government, and depend wholly for marketability upon the capital structure of the banks and the underlying collateral security to the debentures which consists of farmers' notes taken by the banks as security for production loans.

The rate of interest charged borrowers depends upon the cost of loan funds to the Federal intermediate credit banks. Under present regulations, institutions discounting paper with these banks may not charge an interest rate which exceeds by more than 3 per cent. the discount rate of the banks at the time the loan is made. Except under special circumstances, the credit banks are restricted to a 1 per cent. margin above the rate borne by the last preceding issue of debentures. At the present time the discount rate of the Federal intermediate credit banks is 2 per cent., and the rate charged to borrowers through production credit associations, 5 per cent. During the year ended June 30, 1936, production credit loans were made to the amount of \$216,153,000.

The banks for co-operatives, as the name implies, are authorized to extend various types of credit to farmers' co-operative marketing and purchasing associations. Such loans include commodity loans, working capital loans, and loans for the purchase or refinancing of physical facilities.

The initial capital of the banks for co-operatives was subscribed by the Federal Government from funds remaining in the Agricultural Marketing Act Revolving Fund, formerly administered by the Federal Farm Board. Borrowing co-operative associations are required to purchase stock in the system to an amount equal to 5 per cent. of their loans. As in the case of the Federal land banks and the production credit system, provision is made for the retirement of Government-owned stock at such time as the banks are in a sufficiently strong financial position to permit of such retirement. Working capital and physical facility loans to co-operatives are made from

capital funds. Commodity loans are discounted with the Federal intermediate credit banks.

Although the banks for co-operatives are lending capital funds, interest rates charged to borrowing co-operatives are related to the cost of long-term funds as reflected by the rate charged to Federal land bank borrowers and the cost of short-term funds as reflected by the discount rate of the Federal intermediate credit banks. At the present time the interest rate on physical facility loans is 4 per cent.; on working capital loans, 3 per cent.; and on commodity loans, 2 per cent.

During the year ended June 30, 1936, the banks for co-operatives made loans to the amount of \$63,681,000.

The Federal land bank, the Federal intermediate credit bank, the production credit corporation, and the bank for co-operatives in each district are under the control of a board of directors, one member of which is elected by borrowers through national farm loan associations, one member by borrowers through production credit associations, one member by borrowing co-operatives, and four members appointed by the Governor of the Farm Credit Administration. Thus, both borrowers and the Government are represented. The board of directors appoints the officers and hires the employees of the district credit units and is responsible for the general policies followed in the district. Co-ordination is obtained through the board of directors common to all four units and through an advisory committee consisting of the general agent and the presidents of the four credit units. The general agent is nominated by the Governor of the Farm Credit Administration and elected by the board of directors.

So much for the mechanics of the system. I should like to devote my remaining time to a discussion of the objectives of the Farm Credit Administration, as I see them, and to a discussion of three or four important problems which the Administration is facing or is likely to face during the next few years in attempting to reach those objectives.

As I see it, the principal objectives of the Farm Credit Administration are as follows :

1. To provide a complete credit service for agriculture on a business basis and at the lowest possible cost.
2. To provide credit on terms suited to the needs of the farming industry.
3. To provide a dependable source of credit, available in bad times as well as in good times.

4. To establish the system on a co-operative basis, largely or wholly farmer-owned and controlled, eventually free of direct Government subsidies, and thus free from the influences that a heavily subsidized or completely Government-owned and operated credit system is frequently subject to.

In stating as the first objective the provision of a complete credit service for agriculture, I do not mean to imply that there is any thought of completely supplanting private credit institutions serving agriculture. What I mean is that through the various credit units previously described, the Farm Credit Administration provides a system whereby the farmer can reach the investment markets of the country, as does industry, to obtain credit to meet his various needs—long-term mortgage credit, short- and intermediate-term production credit, and credit for his co-operative marketing and purchasing associations.

A second objective is to provide credit on terms suited to the needs of the farming industry. The turnover of agriculture is too slow to make short-term mortgage loans for the purchase of farms or for capital improvements safe to either borrower or lender. The average farmer cannot hope to pay for a farm in five years, yet three to five-year loans to finance the purchase of farms are still quite common in many parts of the United States. Such loans are generally unsatisfactory from the farmer's standpoint and do not always represent a sound investment on the part of the lender. Renewals are costly and uncertain. During 1932 and 1933, for example, life insurance companies frequently found it inadvisable to renew mortgages and pressed for liquidation, owing in part to the heavy demand from policy-holders for loans.

While agriculture requires some 60- to 90-day credit, the volume is limited. The minimum requirement for production purposes ordinarily runs from 6 to 9 months and in the live-stock industry even longer. While the inherent weakness in the common practice of commercial banks in the United States of lending demand deposits to farmers for working capital purposes has long been generally recognized, it was most forcibly emphasized during 1932 and 1933 by the inability of banks to liquidate loans in order to meet the demands of depositors for cash.

It is the function of the Farm Credit Administration to borrow funds wherever available for such periods of time as they may be required by the farming industry and to make loans to individual farmers on terms suited to their needs. Thirty-year bonds are sold by the Federal land banks to finance 30-year non-callable loans.

Three, 6, 9, and 12-months' debentures are sold by the Federal intermediate credit banks to finance production loans with corresponding maturities. Such a system is advantageous to both borrower and lender. The farmer can expect to pay his loan in the regular course of his business without the uncertainty or the costs of renewal. The lender, instead of having a lien on an individual farm or a particular crop or herd of live-stock, which is frequently difficult to realize upon, has a negotiable bond or a debenture that is readily marketable or on which he can easily borrow.

In addition to requiring credit on terms suited to the needs of the industry, agriculture requires a dependable source of credit. Private institutions and individuals lend when, where, and as they please. It is to be expected that such sources will tend to dry up during periods of economic stress and that funds will be transferred from agriculture to more profitable forms of investment at such times as opportunity affords. Since a farmer cannot suspend farming operations because a bank depositor wants his money or the policyholder of a life insurance company wants a loan on his policy, it is essential, from the standpoint of the farming industry, that other sources of credit be developed. If the operations of the Federal land banks over the past nineteen years may be taken as a criterion, the Farm Credit Administration may be expected to meet the third objective of providing a dependable source of credit; a system that will function in times of economic stress as well as in fair weather.

The fourth objective was stated to be the establishment of a credit system for farmers on a co-operative basis, largely or wholly farmer-owned and controlled, eventually free of direct Government subsidies, and thus free from the influences that a heavily subsidized or completely Government-owned and controlled system is frequently heir to. Since we have a long way to go before reaching this goal, and since so much of development in that direction depends upon the course of future events, including the policies of future administrators of the system, perhaps I should state this objective to be a policy of the present administration based upon the belief that agriculture will be best served by a system in which the farmer has not only a financial stake, as represented by his capital stock investment, but in which he is encouraged to take an active interest in the management and to assume the responsibilities that go with membership in a truly co-operative organization.

Let us turn now to a consideration of three or four major problems which the Farm Credit Administration faces or is likely to face

during the course of the next few years if the organization and operations of the system continue to develop along present lines.

One such problem involves a question of major public policy, namely, what the future role will be of certain of the newly established credit institutions which constitute a part of the Farm Credit Administration. Will they function primarily as emergency organizations stepping in to absorb the shock during periods of economic distress, leaving the field to private credit institutions during periods of agricultural prosperity? Or will they actively compete with private lenders in good times as well as carry the major part of the load when times are bad? As conditions improve, much is going to be heard about the Government in business and unfair Government competition with private business. The controversy will centre primarily around the recently established production credit associations and certain phases of the operations of the banks for co-operatives. The Federal land banks, established in 1917, have long since been recognized in the financial community as a permanent part of the credit machinery of the country, although it is interesting to note in this connexion that a storm of criticism similar to the one now brewing with regard to the operations of production credit associations broke over the Federal land banks shortly after they had been established, and subsided only after the question of the constitutionality of the Act creating the banks had been carried to the Supreme Court and decided in favour of the banks, and only after these banks, providing a real service for agriculture, had so firmly established themselves that it became generally recognized that they were a permanent fixture.

The issue as to the future role of the Farm Credit Administration in the financial life of the country must be faced squarely. In reaching a decision, the welfare of agriculture should be carefully considered as well as the desires of other lending institutions. There is little chance that the Farm Credit Administration could monopolize the field of farm credit even if it so desired. It appears likely that its role will consist of supplementing rather than supplanting the activities of private credit institutions. Farmers will borrow where they can get the best service at the least cost. In some instances this will mean that their business will be handled by institutions under the supervision of the Farm Credit Administration; in others by commercial banks or other private lenders. Looked at from the standpoint of the general welfare of agriculture and of the country as a whole, such a development, assuming it occurs, would appear to be a desirable one. Among the major services rendered by our

more efficient farmers' co-operatives has been the establishing of standards of efficiency and service which private business has been forced to meet. To mention but one example, long-term amortised mortgage loans were scarcely known in the United States prior to the establishment of the Federal land banks in 1917. At the present time increasing numbers of lenders are making this type of loan. Unless I am badly mistaken, the policy of the production credit associations in extending credit on a budget basis and insisting on a definite plan of liquidation, rather than relying largely upon the underlying security to collateralize the loan, will be followed by an increasing number of private lenders.

As previously stated, keen competition is certain to develop, and we are certain to hear the cry that the Government is invading the field of private business. However, if the credit institutions under the Farm Credit Administration operate on a business basis, obtaining loan funds wherever they can be obtained at the cheapest rate and lending at rates sufficiently high to cover costs, including the cost of borrowed funds, private business would appear to have no legitimate complaint concerning assistance given to farmers by the Government in establishing their own co-operative credit system.

A second problem—or, perhaps, test—which the Farm Credit Administration appears certain to have to face in the not distant future centres around the policy of attempting to stabilize, in at least some small measure, the amount of credit extended to agriculture by the institutions under the supervision of the Farm Credit Administration. Agriculture as well as other businesses has suffered in the past from too much credit at the wrong time, resulting in losses to both borrowers and lenders.

Prior to the agricultural depression which followed the collapse of farm prices in 1920, farm mortgage credit in the United States was extended, generally speaking, on the basis of the market value of the property offered as security. First mortgage loans, for example, were commonly made up to 50 per cent. of the estimated market value of the farm. In a new country with gradually rising land values and an active real estate market such a procedure worked fairly satisfactorily prior to the War. During the War years land values rose sharply in many parts of the country, and in a great many instances loans were made which were far beyond the ability of the farmer to repay in what might be thought of as normal times, much less under conditions such as existed in the United States in 1932 and 1933. The legislation establishing the Federal land banks (1916) provided that the earning power of the land as distinguished from market value

should be a principal factor in the appraisal of land for loan purposes. From the first, therefore, the Federal land banks placed more emphasis upon earnings than the majority of the lenders. In 1933, faced with the task of refinancing farm debts on an unprecedented scale and a temporarily complete collapse of land values, the Federal land banks began making loans on what, for want of a better term, we have called 'normal values'.

Normal value is interpreted as the value that can be sustained by earning power with normal prices. To date estimates of normal prices have centred around prices that existed during the five pre-War years, 1910-14, adjusted in the case of certain farm products for shifts in production and markets. Such a policy of course resulted during 1933, 1934, and a large part of 1935 in making loans on the basis of a price level considerably above that existing at the time. In other words, loans were made on the basis of values substantially higher than could have been justified at the time either on the basis of current farm incomes or current levels of land values, since, during a large part of this period, a market for farm real estate could scarcely be said to exist. However, with farm prices now approximately 7 per cent. above the 1910-14 level and showing indications of a further increase, with the resultant strengthening in land values, and with private lenders returning to the field and actively bidding for business, it appears inevitable that in the not distant future there will be pressure for increased loan limits.

The Farm Credit Administration will be confronted with the question as to what adjustments, if any, should be made in its estimate of future prices. Assuming the conclusion is arrived at during a given period that current prices and earnings are higher than may reasonably be expected over the life of the loan, can a semi-public institution such as the Farm Credit Administration stand the pressure that is certain to arise for loans on the basis of current earnings? This is an important question in a country where farm prices, farm incomes, and land values fluctuate as widely as they do in many parts of the United States. It has not been hard to justify the normal value policy to date since in the majority of instances it has resulted in appraising farm land at higher levels than current sales prices. The real test will come when it results in appraising farms at levels lower than current sales prices and, as a result, in making a smaller loan on a given farm than a private lender may be willing to make. While I am not so optimistic as to believe that the Farm Credit Administration or any other single agency can fully curb the evils resulting from the over-extension of credit which commonly occurs during periods

when farm prices, farm incomes, and land values are relatively high, I do feel that it is time we started to move in this direction and that at least a few beginning steps have been taken. If substantial progress is to be made towards the goal, a great deal of educational work is going to be necessary among private lenders and among the great mass of farmers who, in the end, are the individuals most severely hurt by the over-extension of credit in periods of agricultural prosperity and the sudden withdrawal of credit during periods of economic depression. Through the loan committees and membership of local farm loan associations and production credit associations, the Farm Credit Administration and the agricultural colleges of the country have the necessary avenues of approach. Here is an educational job that offers a real opportunity and a real challenge.

A third important job on which the Farm Credit Administration is spending a great deal of time and energy at present, and which must be looked upon as a continuous assignment, relates to the task of developing strong active local organizations of borrowers—national farm loan associations and production credit associations—and in co-ordinating their activities. For reasons which I have not time to go into here, this is not only one of our most important problems but also one of the most difficult. It may be stated, however, that it is the present policy of the Farm Credit Administration to encourage the development of these local units in the credit system and to assist in building them up to a point where they will play an active rather than a passive role in the extension of credit and the collection and servicing of loans once they are made. We believe this policy to be sound. This belief is based in part upon the fact that those Federal land banks which encouraged the national farm loan associations in their respective districts to assume a real responsibility both in the making and collection of loans, have weathered the economic storms of the past few years and are in a stronger financial position to-day than those banks which made little or no effort to encourage the development of sound local organizations. The job is a difficult one, particularly in the case of the local associations making long-term mortgage loans, when the farmer comes in contact with the association only at the time he obtains a mortgage loan, which ordinarily is but once or perhaps twice in a lifetime. However, the development of a sound system appears to lie in the direction of building on the basis of strong local units. Certainly, if the farmers of the country are eventually to acquire ownership and actively participate in the management of a group of co-operative farm credit institutions lending millions of dollars annually, it is essential that the part

the majority of farmer-members play in the operation of these local units be active rather than passive.

This leads to the fourth and final problem which I would like to discuss briefly. This problem may be briefly stated in the slang phrase: 'Where do we go from here?' It seems to me there are two alternatives. If we do not build an active interest and participation in the affairs of the system on the part of farmer-borrowers, then it appears inevitable that we shall have a co-operative system in theory rather than in fact. Such a development would inevitably result in the system being blown back and forth by changing political winds. Policies would change with changes in administrators—now liberal, now conservative. Sooner or later heavy losses would occur as a result of unwise lending policies, which would place these institutions once and for all in a position where they would have to depend upon Government aid. It seems fairly safe to assume that control would go to the Government if the Government controlled the purse strings. Complete Government control all too frequently means political control in the undesirable sense of that term. At best, we would have an actively Government-controlled lending agency in which farmers were required, providing the present law remains unchanged, to invest in capital stock, which stock would be nothing more than additional collateral security, subject to loss, and carrying with it nothing in the way of responsibility or control.

The other possible course of development lies in the direction of building, through an active educational programme, strong local units and encouraging the farmer-borrower to accept not only a certain amount of financial responsibility through his capital stock investment but also responsibility for developing a farmer-owned and controlled co-operative credit system; co-operative in fact and in operation, as well as in theory.

Whether or not this can be done remains to be seen. Such a system must have a strong financial structure. This means that the farmer must be willing to pay a margin above the cost of loan funds in an amount sufficient to pay operating expenses, absorb losses, and build adequate surpluses and reserves for contingencies. For a time, at least, during the period the system is becoming established and reserves are being built up, he will have to forgo dividends on his capital stock investment. If he is unwilling to do this, if he demands and obtains a subsidized interest rate—and Federal land bank borrowers now have such a rate, presumably a temporary one—then it seems to me that he must be willing to forgo the advantages of having a credit institution which he owns, in which he has a real

voice in the management at all times, and which is free from the possibility of political control, or of being seriously crippled at some future time through the sudden withdrawal of Government subsidies, direct or indirect. If the farmer is to choose what appears to me to be the more sound course, namely, the development of a farmer-owned and controlled co-operative credit system, he must have the issue placed squarely before him. If he chooses the co-operative route, he must have every assistance in building his local association on a sound basis not only from the standpoint of extending credit on a sound basis but from the standpoint of training a membership which is thoroughly familiar with and alive to the problems of the organization and which will be willing to make such personal sacrifices and to do such fighting as is necessary to enable it to achieve its inherent possibilities. Believing it to be a sound policy, the Farm Credit Administration is encouraging development in this direction. Whether we shall accomplish the objective remains to be seen.

•

A SOUND BASIS FOR FARM MORTGAGE CREDIT

EDWARD H. THOMSON

President, Federal Land Bank of Springfield, Springfield, Massachusetts, U.S.A.

THE subject which I have the privilege to discuss is closely associated with other basic problems of agriculture, such as land tenure, marketing, and banking. These all strike at the base of any system of farm credit. I shall confine my discussion to that phase of farm credit which has the widest application, namely, financing the individual farmer towards home ownership. Corporate or large-scale farming is so scattered geographically and is so different in character that the same factors would not apply.

It is easy to develop a plausible theory on how to lend money on mortgages to farmers, but whether one's programme will stand the test of time, from both the investor's and borrower's standpoint, is another matter. It is quite as difficult as to attempt to tell how to operate several thousand individual farms of all types and conditions so that they will be successful and free of debt a generation hence. At best, therefore, all I can hope to do here is to review, briefly, the available farm mortgage experience, and draw such conclusions as may seem warranted.

Fortunately for me, I had the opportunity to spend ten years in farm management research with special study of those factors, both physical and economic, which seem to control profits in American farming. This was just prior to the time I became administrative head of the Federal Land Bank of Springfield, seventeen years ago. Since then I have had the privilege of serving under able bank directors and under seven different Land Bank Commissioners as national administrative officers. The conclusions I present are my own observations and, if in error, I must assume that responsibility.

The financial structure of an agency furnishing farm mortgage credit will vary, depending upon whether farm loans are its sole function or whether they constitute only a part of its lending activities. Most institutions that have entered the farm mortgage field have under-estimated the amount of capital and reserves needed to tide them over periods of depression. The pace of farming is so slow that it takes years for farmers who suffer reverses to recover. Particularly in times of low or falling prices, some of the lender's capital will become partly frozen in foreclosed real estate, delinquent interest,

and in advances for taxes and insurance, so that the institution may find itself in a strained position unless it has adequate funds to carry it through the cycles. Again, operating expenses increase greatly during a troublesome period while earnings decline, adding to the burden.

The statutes governing farm mortgage banks usually allow them to issue from fifteen to twenty times their capital in bonds or other obligations secured by their mortgage loans. This ratio may be adequate in periods of stable or rising land values when troubles are few, but under such conditions as have existed in America in the past twenty years, such a ratio is altogether inadequate. Bonds or liabilities of not more than ten times the capital and reserves would be much better.

On June 30, 1936, the twelve Federal land banks in the United States had a combined capital, reserves, and undivided profits of \$393,929,687 and outstanding bonds in the amount of \$1,964,448,000, which is a ratio of one to five.

The Federal land banks have made their loans through local co-operative units known as national farm loan associations, of which there are over 5,000. Each serves a community, a county, or, in some cases, a larger area. They are modelled, in most respects, after the long-established local credit societies of central European countries. Each farm loan association has initial capital equal to one-twentieth of its loans, which capital is pledged with the land bank of the district as additional collateral for all the loans made through that association.

The amount of capital in the associations has proved wholly inadequate in the nineteen years' experience of the system. This may be due to any one or all of several factors—too high loans, too many loans in poor farming regions, too small returns as dividends on their capital, or failure to hold earnings as reserves against future losses. In any event, if the capital of these local associations had been supplemented by an equal amount of reserves or surplus, making a ratio of one to ten, more of the associations would be functioning to-day in spite of being a new undertaking in American farm credit and having operated through one of the most difficult periods in our history.

Where farm land values have remained fairly constant, the national farm loan associations are in very good financial condition. For instance, in the State of Connecticut—a state with very little fluctuation in land values—there are fifteen such associations which have operated since 1917-18. Eleven of these show no capital impairment, and only one has an impairment of over 5 per cent.

Institutions which lend on long-term farm mortgages are also confronted with the problem of obtaining funds through the sale of bonds on a basis that will not prove embarrassing during some period. The contract rate of interest carried by long-term mortgage loans may be lowered but cannot be raised and, with the form of amortisation generally used by the Federal land banks in the United States, twenty-four years elapse before a loan is half repaid. If the lending institution is fortunate enough to be able to refund its outstanding bonds at lower rates of interest, to increase the spread between the mortgage rate and the bond rate, all is well. If, however, the institution has maturing bonds which it must renew at higher rates, but yet cannot raise the rate of interest to its borrowers, the situation may become very embarrassing. The proper timing of bond and mortgage maturities, coupled with the best possible diagnosis of the long-term interest trend, is a most intricate and difficult problem.

If amortisation payments are reinvested in mortgages, bond issues may mature when investment funds are scarce and rates are high. If principal repayments on contracts are invested in government bonds or other readily salable securities, the yield may be less than the rate paid on the bank's own outstanding obligations. Since the earnings of mortgage institutions depend largely upon the spread between the loan rate and the bond rate, proper financing is a most important matter.

Experience has shown that life insurance companies must operate on a wide margin of reserve. Each year they collect huge sums in excess of expected needs, the companies returning the unused portion in the form of dividends to their policy-holders.

The mutual savings banks in the United States operate in a similar way. Most of these banks are located in the north-eastern States and have had a very successful experience, many of them being over a hundred years old. At the close of June this year they had over ten billions in deposits. Their deposits are on demand, or require reasonable notice, and the banks make no guarantee as to interest or dividend return. With no capital stock, but with large guaranty funds, the entire income from mortgage loans and investments is available, should occasion arise, for expenses or emergencies. Their financial position is flexible enough to meet almost any situation. With about half of their deposits invested in mortgages, rural and urban, I question whether they could have survived the numerous severe depressions through which they have passed if they had had fixed interest-bearing obligations instead of open deposits on which

they paid only net earnings after expenses and adequate reserves were deducted. As a matter of experience, the records of a very successful mutual savings bank in Massachusetts show that over a 47-year period the spread actually needed between interest on loans and net interest paid to depositors was eighty-nine hundredths of 1 per cent.

In this fast-changing world it seems impossible to predict conditions that may arise, so only the most flexible and safest plan of operation should be followed.

An institution lending to farmers must be prepared to operate in good times and bad. It can do this only by building substantial reserves which will be available in periods of depression. Investment funds in the open market frequently are not available during periods of stress or may be obtained only at prohibitive rates. It is during such periods, when other credit sources are restricted, that farmers need help. The institution which can help them then is the one that serves best.

For these reasons, a capital structure and basis of earnings that will provide the maximum safeguards for continuing service best serve both the borrowing farmer and the man whose money is borrowed.

A review of farm mortgage experience indicates that the type of organization or type of institution making the loans has much to do with the success of the undertaking. Several different systems have been tried, but the oldest systems are those, mostly co-operative in character, which have operated successfully in Europe for a long period of years. Patterned somewhat after the farm mortgage banks of Germany is the Federal land bank system which, as mentioned before, has been in operation on a nation-wide basis in the United States since 1917. Owned in part by the farmers themselves and partly by the United States Government, the system may be called semi-governmental.

A third type is the State-wide, rural credit systems of which there are at least three examples in the United States. A fourth type is the private mortgage banks that operate under government supervision as represented by the joint-stock land banks in the United States. In the fifth group are insurance companies, local commercial banks, mutual savings banks, local credit unions, and wholly private mortgage companies.

It is not possible to analyse here the set-up of each of these different types or trace their methods of operation and experience. However, a brief summary of their most important features, with a view to reaching certain conclusions, is desirable.

I am most familiar with the Federal land bank system which was organized only after a special government commission had made a study of the set-up and experience of all types of rural credit then in existence.

The object of the American system was twofold: to furnish a form of sound mortgage credit that fitted the needs of agriculture, and to provide this credit in a manner which would attract the investment funds of the large banking centres. The aim was to provide not only an additional source of farm mortgage credit in regions already reasonably well supplied but, more particularly, new credit in parts of the country where interest rates were high and funds not abundant.

This system is primarily directed through the twelve Federal land banks which are so located as to serve adequately our entire forty-eight States. One of the functions of the banks is to organize the national farm loan associations. These associations are simply local groups of borrowers, conveniently located, who agree upon a certain limited liability for each member on the loans of all other members of the one association. Each local association is independent in action as to the officers it selects and the loans it approves or rejects. Moreover, no loan may be made by a Federal land bank until it is first offered and approved by an association under its jurisdiction.

In effect, the Federal land banks act as banks of rediscount. However, in actual practice the banks do not operate in the sense that reserve banks discount commercial paper, since the associations have no funds of their own with which to make loans in the first instance. The loans made through all the national farm loan associations in a given Federal land bank district constitute the basis of the collateral against which farm loan bonds are issued and sold to the investing public. Each Federal land bank, in turn, guarantees the bonds of the other banks, thus creating a national system.

Experience already gained by the Federal land banks indicates that the national farm loan associations or local units have an important part in the programme. The importance of local contact with individual borrowers is often not realized until collection and real estate troubles arise. The local agency must be thoroughly acquainted with the problems of agriculture in its particular area. It should also have a sense of local responsibility because operating expenses can be reduced materially if the local associations function efficiently.

Experience also indicates that two appraisals—one by the local association and the other by the Federal land bank, each bound by

the lowest amount recommended in either case—is an additional safeguard.

While the American farm loan system was patterned closely after the farm mortgage credit system of central Europe, conditions in the United States were so altogether different and so varied among the States that the application of what was apparently a sound principle has not worked out in the same way throughout the nation.

As nearly as I can determine, the units of the European system, after which the American system was modelled, were strictly local co-operatives, functioning in given communities, with each member fully acquainted with the operations of his neighbours and willing to insure fully their success. These locals, for the most part, operated with little expense, the services of the officers being largely voluntary.

Perhaps one reason for the success of these European farm credit associations was that they were located in an area where the supply of farm land was limited and very intensive farming was necessary. Population was dense, and the production from each piece of land was fairly well known. The average farm was about twenty acres in area, and there was the further advantage that the credit or resources of an individual in the community were known to practically every one else in his section.

In organizing a similar system in the United States, it soon developed that only in certain regions were the farmers ready and educated to this type of credit system. Mutual institutions for financing were not common among the farmers in many areas, hence there was little experience to guide them. The result has been that in some regions where the associations have continued small in size and on a community basis, they have operated with little expense and have done creditably. In other regions, the associations developed so rapidly that they soon lost the community interest and salaried employees were needed if adequate supervision and efficient functioning were to continue. Where troubles have not been too severe, both types of associations have continued to grow and are functioning well to-day. The question remains, nevertheless, as to whether an association requiring the services of a salaried officer will be as effective in the long run and provide credit as cheaply as the form of organization originally intended, namely, the small local unit with little or no overhead expense.

I believe both types of local credit associations are justified, depending upon the volume of loans, the attitude towards co-operative finance, and the character of the borrowers. Of this I am convinced; whatever the type of central lending institution, some form of

local borrower contact is needed. Personally, I favour the smaller association serving a local community with the borrowers having the same general interests, and with the unit operating with more or less voluntary service. I realize that in times of stress and trouble additional expense and service will be needed. However, farm mortgage credit under normal conditions should not require much field service with individual borrowers. All collections and book-keeping transactions, after the loans are placed, can be done through the central institution. Collections, in the few trouble cases, may be made by the local association officials.

This conclusion as to the need of these local contacts is supported by the experience of the farm loan societies in Europe, by the experience, in America, of local mutual fire insurance companies, some of which have operated over a hundred years in our eastern States, and by the experience of our mutual savings banks which have had a long history of success.

Several attempts have been made in the United States to organize and operate State-wide rural credit systems. These have been governmental in character, designed to furnish farm mortgage credit at low rates and for long terms to farmers of a given commonwealth. They operated from a central bank with no local groups. Loaning funds have been obtained through bond issues, in some cases based partly upon the security of the loans themselves and sometimes on the credit of the State. Of three such systems which I have reviewed, all are now in liquidation. A recent report on one such system with total resources of about \$39 million showed that over 77 per cent. of its resources were in loans in process of foreclosure or in real estate owned.

The experience of private mortgage banks operating under governmental supervision has not been favourable, judging from the length of time they have operated, the number that have failed, and the service rendered. Eighty-eight joint-stock land banks were organized in the United States during the period from 1917 to 1931. Many failed and by mandate of legislation all are in liquidation. They provided serviceable loans to farmers on terms that fitted the farm business, but much of the service was done at the expense of the investors and stockholders.

The private farm mortgage companies are so varied in character that any conclusion regarding them would be inappropriate.

Some of our large life insurance companies have operated fairly successfully in the farm mortgage field, such loans making up only a part of their investment portfolios. Their interest rates have not

been so low, or their repayment terms so favourable, as loans furnished by semi-governmental institutions, but unquestionably these companies have been a real benefit in furnishing credit to new areas. At the same time, their loans have been a sound basis of investment for the reserves of their policy-holders. Here again, the experience of the life insurance companies indicates the need for local organizations, especially in times of stress. Local agencies, paid by fees and commissions to make new loans, serve well in times of prosperity when there are no delinquencies or foreclosures, but their ability and responsibility often fade when the loans need servicing from a trouble standpoint.

The mutual savings banks as found in the north-eastern part of the United States offer an interesting chapter in mortgage credit. When confined to their own immediate localities, their loans, for the most part, have been safe and constructive. When they made loans outside of their own communities, they encountered a lot of trouble. Their supply of funds has depended entirely upon local savings, both rural and urban, and ability to make new loans has been subject to the volume of savings. These banks are wholly mutual in character, being organized by the citizens of a community as a depository for their savings, to receive therefrom the full interest return less the cost of operation and necessary reserves.

While some may not agree with me, my observation is that most farm mortgage loans made by these institutions have been satisfactory from the borrowers' standpoint. While the loans are practically demand in character, rarely have unreasonable or severe demands been made. Generally the banks are local enough in character to sense local conditions, to make sound appraisals, and to serve their borrowers at low cost. Their weakness is that in times of stress, when new funds are most urgently needed, their resources are limited. Moreover, their deposits are frequently drawn from urban communities and the banks gradually take on the complexion of the city rather than of the country. When that occurs the bank officials lose touch with agriculture and fail to appreciate the farmers' needs. I believe, however, that mutual savings banks or local co-operative credit unions, operating in regions that have a reasonable amount of funds for investment and having some kind of a central reserve fund available when needed, could be made eminently sound and serviceable in the field of farm mortgage credit.

We often forget that farmers are as much interested in savings as in loans. The latest available United States census indicates that 58 per cent. of owner-operated farms are free of mortgage debt. Not

only farm owners but members of their families have savings to invest. If these savings can be kept in the local banks that operate under the most stringent regulations and restrictions, they are more likely to be invested judiciously and to be available when needed. Long-range investments are more apt to suffer losses unless very carefully guarded. Some of the saddest pages in the history of American agriculture tell of the losses of hard-earned, lifetime savings of farmers through poor investments. Some of our best agricultural States, where farm owners are now deeply involved financially, once possessed untold millions of bankable wealth.

Sound farm mortgage credit requires that the loans be made to fit the needs of the farm business. Farming is not only a long-term business but it is subject to wide variations, unforeseen hazards, and factors which cannot be controlled. Different types of farming require different kinds of financing. The repayment of a loan must necessarily be made from the productive income of the property. While the loan is made to the operator, the resources at his command determine his income-producing ability and his ability to pay.

We have three types of mortgage loans in general use to-day. Probably the most popular form is the amortised loan which requires interest plus regular payments on principal during a given period of years. The period varies from 10 to about 35 years, the majority of such loans being written for 20 or 33 years. The 20-year loan requires a payment of 5 per cent. principal per annum, while the 33-year loan requires 3 per cent. principal per annum with a slightly larger payment the last year.

The type in general use by commercial banks, mortgage companies, and insurance companies is written for three or five years with only interest payments required during that period. At maturity a loan may be renewed, it may be called in full, or a part payment may be demanded. Of late years, there is a tendency to change these loans to the amortised type.

The third type, characterized as a demand loan, has been generally used by mutual savings banks. Nearly all of these mortgages have been written for one year and are on demand thereafter. However, the practice has been to make no demand for payment as long as the interest is paid and the security is kept in good condition. While such a loan may place the borrower in a precarious position, it possesses many advantages from the standpoint of both borrower and lender. Perhaps the best criterion is that it has been used successfully over a long period of years.

Loan limits, in relation to appraised values, are provided by the

statutes governing farm mortgage banks except those privately owned. The usual limit is about half of the property value. Restrictions are of no value, however, unless the appraisal itself is sound, and appraisals are hard to control by statutes. The integrity and loaning experience of the bank offer better safeguards than any arbitrary loan limits. Time does not permit a discussion of appraisal problems—soils, buildings, farm lay-out, water-supply, and other factors which should be considered. Loaning institutions have different appraisal methods and various appraisal report forms. It is my observation that the ability of the appraiser is far more important than the appraisal form. Perhaps the best form is a blank sheet of paper in the hands of a competent man. Each farm is an individual study and a keen appraiser will give the proper weight to the factors controlling its success. Another appraiser, provided with elaborate forms, may easily lose himself in a mass of detail and fail to point out the essential features upon which the loan should be considered.

Too great emphasis cannot be given to the ability of the appraiser, for, in the final analysis, it is the man who interviews the operator and examines the farm who really makes the loan. The executive officers must necessarily be guided very largely by the report of the investigator. Statistical information as to trends, production, markets, and the like, should be thoroughly understood by the investigator so that he may correctly interpret the future of the particular farm in the light of the best information available.

It is the experience of most farm mortgage institutions that they undervalue the higher grade farms and overvalue the poorer ones. In the same way, if properties have to be foreclosed and sold, there is a tendency to undersell the good farms and to endeavour to oversell the poorer ones. Local values seldom reflect the difference in worth between land which normally produces 30 bushels of wheat per acre and that which produces only 20. Good farms in a neighbourhood of poor ones are sometimes undervalued, but overvaluation of a poor farm in an area of good farms is a very frequent error. Many such farms are always on the market and form the stock in trade of some real estate operators. They have, however, very little debt-paying capacity.

In most regions there are many farms that are capable of producing a living for a farmer and his family, but which, even under reasonably good management, have little capacity for paying debts. In other words, the gross income from such properties is hardly more than sufficient to furnish the owner and his family with a moderate living, pay the taxes, and keep the property in repair. Such farms

have an exchange or sale value and, if supplemented by outside income or if operated with unusually high efficiency, will provide the income to repay small loans. On great numbers of such properties, however, any mortgage debt is likely to prove a hardship as the payments must be made from funds which should go for living expenses. Farm mortgage institutions encounter many cases of this character.

In the United States the character of the community—the ideals of its people, its schools, churches, and its desirability as a place in which to live—has an important bearing upon farm values. It follows that changes in the characteristics of a community vitally affect property values. Generally a farm is a home as well as a place on which to earn a livelihood. There are districts, however, where the farm is regarded as strictly a place of business, the homes being centred in towns or cities. As a region grows older, there is usually more emphasis on the homes, and this emphasis is accompanied by better buildings, a more-established type of agriculture, and a stronger community life. The degree to which farmers are attached to their homes is a strong factor in determining the effort and sacrifice they will make to retain them under adverse conditions.

The chief security in short-term credit is the character of the individual. His promise is supported by his reputation for ability and his willingness to pay. The personal factor is of equal importance with farm mortgage loans. A loan is made to the man, and much will depend upon his character, intent, and ability. These should be investigated first, and, if found satisfactory, the farm which is offered as collateral security comes next.

It is true that farms may change ownership or the operators may die, but these changes affect only a part of the loans of an institution and are no excuse for lending to poor moral risks, even on good security.

In 1918, the first full year the Federal Land Bank of Springfield operated, it made 1,811 loans. Now, 18 years later, 675 or 37 per cent. have been paid in full; 251 or 14 per cent. have been foreclosed or deeded to the bank; and 885 or 49 per cent. are still in force. Of this last group, 615 or 70 per cent. are still in the hands of the original borrowers and the mortgages have been reduced 27 per cent. These figures in themselves are convincing evidence of the need to consider the personal factor when the loans are made.

While it may slightly restrict private sales or transfers of farms, there are good reasons why mortgage loans should become due and payable at the option of the lender upon change of ownership or

death of the owners. If, upon investigation, the new owner of the farm proves to be a satisfactory risk, then there is no reason why the loan should not continue.

Experience with farm mortgage loans in some districts shows that gradual depreciation of the security is a frequent cause of trouble. As an illustration, a loan was made fifteen years ago to a successful farmer who was then 50 years old and operating a good farm. To-day at 65, with failing health and largely dependent upon hired labour, he finds himself gradually losing ground and unable to meet expenses. His intentions are good but, with waning strength and lessening resources, the need for repairs to his buildings increases, the land loses its fertility by reason of not being operated to capacity, and year by year the property depreciates. Presently, with delinquent interest and depreciation of the premises, the mortgagee may find these items pile up faster than the payments on principal will reduce the debt. If there is a ready sale for farms, such an owner may be able to save his equity by transferring the property to a new owner. Depreciation problems are much more acute towards the close of a depression cycle.

Dependability of farm income has an important bearing on loaning policies. If a farm is well diversified so that the operator has several sources of income and is well insured against extremely low prices for a particular product or against loss of one or more crops through weather hazards, fewer safeguards are needed on a long-term loan. If, however, the type of farming is hazardous, with too great possibilities of complete loss of income in certain years, then precautions must be taken.

One-crop farming, and to a certain extent a single type of live-stock farming, must always be subject to extreme fluctuations in income. Crop failures and low prices are beyond the control of farm operators. To meet such conditions provision should be made for temporary deferment of principal payments and possibly interest also, with higher principal payments in good years.

I know of no system in America that provides for larger payments in good years to be used as reserve for subsequent bad years. This is needed, however, if the best results are to be obtained and the best service is to be rendered. The form of amortisation used by the Federal Land Bank of Springfield permits larger principal payments in favourable seasons as an offset against smaller payments or entire lack of them in unfavourable times, but the larger payments in good years are not compulsory.

The granting of farm mortgage credit requires the best possible

analysis of long-term trends of agriculture in a given area. The net income from most types of farming is such that a long period of years is required to liquidate a loan that amounts to half the value of the property. Changes in markets due to competition from other areas and changes in methods of transportation cause major shifts in agriculture. Coupled with these long-term shifts, changes in methods of production due to new machinery and increasing problems of combating new insect pests and plant diseases make it extremely hard to forecast the future of a farming area which may seem perfectly sound to-day.

Experience has shown that it is not the mistakes of appraisers on individual farms which have caused trouble to lending institutions, but the lack of a proper diagnosis of the trends of agriculture over a period of years. Troubles arising from adverse trends are cumulative in effect. While the productive capacity of a farm must be carefully appraised, its markets for produce are of equal importance. Dependability of markets is on a par with dependability of production.

Added to all the uncertainties and changes in trends due to shifting markets, soil depletion, and weather hazards, are the effects brought about by changes in price levels. Such changes may be nation-wide or world-wide and wholly outside the control of the individual farmer or lender, and they wreak havoc with any farm mortgage programme. Such changes may bring inflation or deflation, the effects of which are equally serious to a long-time business like farming where one cannot hurry the forces of nature and where the favourable harvests are few, even during a man's lifetime.

Of far-reaching importance in farm mortgage financing is the possibility of unfavourable legislation such as moratoria of interest or principal, statutes forbidding foreclosure, and the like, which add enormously to the cost of operating a system. A still more important factor is the possibility of excessive taxes or legislation which prevents farmers from applying their income to their indebtedness. Local taxes in many farming districts become such a burden that they alone amount to a fair rental for the entire farm, leaving nothing for the owner to apply against interest and principal of his debts. The farmers in a community, however, may be in no way responsible for tax programmes which vitally affect them. Laws are often imposed by legislatures whose members are from cities and whose interests are not the interests of farmers. Nevertheless, property owners become the chief sufferers.

Certain types of agriculture require short-term financing for such

production items as fertilizer, feed, and seed. The question frequently arises as to whether the payments on such production loans take precedence over payments due on the first mortgage. Obviously, a first mortgage when granted is based on the earning capacity of the farm, with the understanding that the first proceeds from sales will be used for mortgage payments. Only the living expenses of the farmer and his family and taxes are recognized as prior claims. Statutes governing mortgage loans provide that the mortgagee may hold the growing crops. Obviously, supplies for production are necessary, but rates of interest for short-term loans provide for the risks and hazards common to them. If their repayment is to precede the mortgage interest, then mortgage rates will greatly increase and the total cost to the farmer will be raised. I know of no region that has a good mortgage credit rating where crop liens are allowed to interfere with the instalments due on mortgages. Only in real emergencies or crop disasters can the basic mortgage lien on the proceeds of crops or live stock be subordinated to other creditors.

A continuing institution in the business of making mortgage loans to farmers must do a certain amount of educational work. Prospective borrowers need to be informed of the services which the bank or company is prepared to render; old borrowers need to be reminded of the services they receive; bondholders or those whose funds are being loaned need to be furnished with complete and accurate information on operations. It is not sufficient to carry an educational programme for a year and then feel that the job is done. It must continue. Conditions are constantly changing; new borrowers take the place of the old ones, and new investors come into the picture.

The bank, in effect, goes into partnership with every farmer it finances. It is essential, therefore, that the borrower should have complete confidence in the lending institution; that he should get a fair deal and realize it to the point where he will make every sacrifice to see that his interest and principal are paid when due. There is no substitute for integrity and willingness to pay.

Thus, we find many factors, besides the natural and physical resources of a farm or the qualifications of the operator himself, which enter into a well-balanced farm mortgage loaning policy. One must be on the look-out for long-term trends of distant forces, which may be difficult to foresee at the time a loan is made. One must keep in mind the possibilities of changes in price levels, adverse legislation, and the like, nearly all of which are wholly beyond the control of the farmer or the lender.

The requirements for sound mortgage credit may be summarized somewhat as follows:

(a) The institution or company should have capital, surplus, and reserves equal to at least 10 per cent., and preferably 15 per cent., of its volume of outstanding loans. Such capital is needed not only to provide earnings but to tide over the cycles of depression common in agriculture.

(b) The system should provide a spread between the loan rate and the cost of funds much larger than normally needed, preferably $1\frac{1}{2}$ to 2 per cent., with some provision for refunding surplus earnings to borrowers if not needed for emergencies or reserves.

(c) A dependable source of funds must be available, even in hard times, with rates low enough to permit loans that will attract the best farmers in the best regions.

(d) Loaning policy should provide: (1) a liberal attitude towards the most efficient farmers on the best lands; (2) a very conservative policy towards any loans on the poorer grades of land; (3) absolute rejection of all applicants of poor character or inferior ability as operators.

(e) A form of mortgage should be used that provides maturities and payments that fit the business of agriculture, with necessary variations for different types of farming.

(f) The system should adopt a consistent and continuing educational programme coupled with local associations or local units to keep in contact with both old and new borrowers. These local agencies must be agriculturally minded and operate with low overhead cost.

(g) Personnel must be trained in finance and in agriculture, capable of diagnosing farm problems, and so selected and employed that the individuals are free to exercise their best judgement. Particular emphasis should be given to the selection of the most capable men for appraisers.

(h) Provision should be made for safe investment of farm savings as well as provision for farm loans. Most farm communities have ample means to finance themselves if the savings are properly conserved.

(i) A straightforward policy of fair dealing must be accepted and carried out by providing both the farmers and the investors with full information on all operations.

(j) Above all, the bank officials must have confidence both in farmers and the business of agriculture, and recognize the fact that the rank and file of farmers are honest and will pay their debts.

EXPERIENCE OF DEBT ADJUSTMENT IN CZECHOSLOVAKIA

EDUARD PATKA¹

Institute of Accounting and Farm Management, Prague, Czechoslovakia

IN Czechoslovakia the amendment of debts has been followed with great interest by the general public, but most especially by the farming population. The hopes cherished by many debtors with regard to this problem were often premature and exaggerated. But the fears voiced by the numerous savers concerning the security of their investments were also unwarranted. It is therefore no wonder that, in this atmosphere of extraordinary hopes on the one side and doubts and concern on the other, a long time was occupied by debates and discussions on amendment of debts. Amendment of debts in Czechoslovakia endeavoured to maintain the principles of decency, justice, and due respect both to debtor and creditor.

Since the year 1929 the incomes of farmers, of the State, and of the municipalities, as well as of the industries, have dropped by about 30-40 per cent. in general, without an equivalent decrease of public or private liabilities. This decrease in the profitability of all types of production signifies that the income of private business has declined, i.e. also income from savings and capital. The problem was that this decline should be equal to the drop in other forms of income, that is to say, neither less nor greater than the decline of income from other sources. This could only be attained by a general legal regulation and not by private or individual agreements which would have led to unjust results. It was the object of the measures introduced by the Czechoslovakian State for the amendment of agricultural debts to prevent such injustice and to find an equitable solution both for debtor and creditor.

There are no exact statistics concerning the indebtedness of Czechoslovakian agriculture, but the representative investigations carried out by the Agricultural Institute of Accounting and Farm Management of the Czechoslovakian Republic (Director Dr. Vlad. Brdlik) give valuable information.

In 1931 this institute carried out over the whole country a large-scale sample survey by means of questionnaires concerning production and returns of farms in Czechoslovakia. Besides many other

¹ A summary of the paper was read at the Conference by Dr. F. Windirsch, Agricultural Council, Prague.

questions in the systematic investigation of the surveyed farms, the indebtedness of the business was determined. The survey covered a total of 3,040 farms.

As agricultural debts grew to be an urgent problem, the indebtedness of farms was again ascertained by the Institute by means of a special questionnaire in 1935. This investigation covered 2,894 farms all told.

In handling the whole data, the indebtedness per ha. of farm land in the various size-groups, in the various regions of production, and in the provinces of the State was determined. Furthermore, indebtedness was analysed according to different degrees of indebtedness, and total liabilities were calculated by multiplying debts per unit of land by the total acreage of the group in question.

The indebtedness per ha. of farm land on January 1, 1931 and 1935, in the size-groups in the western provinces (Bohemia and Moravia-Silesia) and in the eastern provinces (Slovakia and Carpatho-Russia) was as follows:

TABLE I. *Indebtedness of Farms in Provinces of Czechoslovakia, 1931 and 1935*

Size-group	Western Provinces (Bohemia and Moravia-Silesia)		Eastern Provinces (Slovakia and Carpatho-Russia)	
	Jan. 1 of the year		Jan. 1 of the year	
	1931	1935	1931	1935
	per ha.	per ha.	per ha.	per ha.
0-2 ha. . .	3027 Kč.	4137 Kč.	2462 Kč.	3192 Kč.
2-5 ha. . .	2461 „	3316 „	1725 „	1889 „
5-20 ha. . .	1681 „	2225 „	1080 „	1235 „
20-100 ha. . .	1873 „	2540 „	1422 „	1699 „
Over 100 ha. .	2242 „	2632 „	1991 „	2411 „

In general, indebtedness is greater in the western provinces (Bohemia and Moravia-Silesia). The increase of debts from 1931 to 1935 was also higher in the western than in the eastern provinces. It would, however, be erroneous to draw the conclusion that the burden of debts was less heavy in the eastern provinces (Slovakia and Carpatho-Russia) than in the west. The eastern provinces have less intensive forms of farming, yields and prices are lower, and therefore farm incomes and the values of agricultural holdings are less. The burden of debts is rendered more severe in the eastern provinces through the form of the debts. In the east of the State, particularly in Carpatho-Russia, the proportion of long-term, cheap mortgage debts decreases.

The medium-sized peasant farms with 5-20 ha. of farm land, covering about 50 per cent. of the total farm land of the State, always were and are the least indebted. The farms below 2 ha. show the greatest indebtedness, but it must be borne in mind that here we often meet with non-agricultural debts and that often non-agricultural types of income contribute towards the repayment and redemption of these debts, especially labour earnings outside the farm, particularly for casual labour.

The distribution of debts among Czechoslovakian farmers is demonstrated by the frequency of the various amounts of indebtedness per unit of land (intensity of indebtedness).

The distribution of farms according to absolute indebtedness in Kč. per ha. on January 1, 1931 and 1935, expressed in percentage of the total number of investigated farms in the western and eastern provinces, is as follows:

TABLE II. *Distribution of Farms according to Indebtedness per ha.*

(Shown as percentage of all farms in survey)

<i>Debts per ha. of farmland</i>	<i>Western Provinces (Bohemia and Moravia-Silesia)</i>		<i>Eastern Provinces (Slovakia and Carpatho-Russia)</i>	
	<i>Jan. 1, 1931</i>	<i>Jan. 1, 1935</i>	<i>Jan. 1, 1931</i>	<i>Jan. 1, 1935</i>
	per cent.	per cent.	per cent.	per cent.
No debts . . .	27.5	19.8	18.8	14.5
—1,000 Kč. . .	24.8	22.6	40.0	39.8
—2,000 „ . . .	16.0	15.3	17.0	18.7
—3,000 „ . . .	9.5	11.5	8.7	10.1
—4,000 „ . . .	6.2	7.7	6.9	5.3
—5,000 „ . . .	3.7	5.3	3.1	4.7
—6,000 „ . . .	3.1	4.2	1.9	2.6
—7,000 „ . . .	2.5	3.8	0.8	0.9
—8,000 „ . . .	1.8	2.6	0.6	1.0
—9,000 „ . . .	1.0	1.8	0.8	0.8
—10,000 „ . . .	0.9	1.1	0.2	0.5
Over 10,000 Kč. .	3.0	4.3	1.2	1.1

Although agricultural conditions grew steadily worse from 1931 to 1934, nevertheless on January 1, 1935, 19.8 per cent. of the investigated farms in the western provinces (Bohemia and Moravia-Silesia) were free from debts, and in the eastern provinces (Slovakia and Carpatho-Russia) 14.5 per cent.

The total indebtedness of agriculture in Czechoslovakia amounted to 15.7 milliard Kč. on January 1, 1931, and 19.2 milliard Kč. on January 1, 1935.

In the first stage, the farmers were temporarily protected against selling-out and bankruptcy proceedings for all debts (with certain

exceptions) which had been incurred previous to May 19, 1933, by a veto on compulsory auctions of agricultural property. In 1934 a general moratorium was proclaimed for all areas stricken by the drought catastrophe. Both measures were limited to the end of the year 1935 and only had the character of postponement of repayment obligations of the farmers. They were simply precautionary measures, and in the meantime other measures were in preparation which were to give real aid to the indebted farmers.

The first such measure was a general reduction of the rate of interest by government decree with validity from January 1, 1936. The reduction of the rate of interest on loans was on the average 1 per cent. and implied, in view of the former average rate of interest of 6 per cent., a relief corresponding to a curtailment of the debt capital by almost 17 per cent.

The rates of interest vary according to the type of finance institution. Thus, e.g., the Raiffeisen co-operative banks are not allowed to charge more than $4\frac{1}{2}$ per cent. for long-term mortgages which are secured by legal guarantee, otherwise $4\frac{3}{4}$ per cent. Assuming the total debts to be 20 milliard Kč., the reduction of the rates of interest brings Czechoslovakian agriculture relief amounting to approximately 200 million Kč. annually.

A further decree deals with facilitated repayment of agricultural debts. The repayment of debts, temporarily checked by the moratorium, is to be resumed in certain moderate instalments, in the case of short-term debts, from October 1, 1936, over 8 years, in the distressed areas over 9 years, and in the case of long-term debts (mortgages) over a period of 37 to 40 years according to the terms of the contract.

This decree further provides that the execution of compulsory auctions of movable and immovable goods, as well as compulsory administration, which according to the previous stipulations of the agricultural moratorium could not take place, is to be suspended until after September 30, 1936.

The government decree of March 31, 1936, concerning the amendment of agricultural debts solved a further part of the debt problem and dealt with one of the most important questions, even although it is one applying to individual cases, in contrast to the general effect on all debtors of the reduction of the rate of interest and the regulation of repayment of debts.

This decree regulates the special clauses of the general amendment decree which applies to all trades in such a manner as to make it serviceable to farmers. Certain clauses are altered and replaced

by other regulations. Thus, in particular, the minimum quota is in the majority of cases reduced from 45 to 35 per cent., and it is also stipulated that mortgage claims can be submitted to amendment whenever they exceed 80 per cent. of the value of the farm.

For the purposes of granting financial aid in the execution of the whole scheme of agricultural amendment of debts an Aid Fund for indebted farmers is to be established, out of which the deficiencies which accrue to the credit institutions in the course of the execution of the whole scheme can be refunded. The fund will probably be administered by the Minister of Agriculture and will also have to fulfil important duties in the completion of the land reform and in the execution of further programmes of land distribution and land settlement.

Thus, like many other European countries, Czechoslovakia took charge of the amendment of agricultural debts. These debts were, it is true, mainly incurred during the years of agricultural prosperity, at which period profit forecasts were on quite a different basis, but the burden only became apparent in recent years when the lack of profits in farming rendered it impossible for the farmers to fulfil their credit obligations. The amendment of agricultural debts was performed in Czechoslovakia by means of the following measures: general reduction of the rate of interest, easier repayment of agricultural debts, application of the general amendment decree to agricultural conditions, and provision for the establishment of an Aid Fund for indebted farmers for the purpose of granting financial support. In amending agricultural debts, care was taken in every case not to outstep the rules of fairness and justice and equally to respect the rights of debtor and creditor. Also, before the amendment of agricultural debts in Czechoslovakia, many measures were taken to create conditions leading to a rise of agricultural prices or to prevent further collapse of prices, in order thus to restore the profitableness of agricultural business.

•

SOME PROBLEMS OF THE PRODUCTION CREDIT SYSTEM

A. L. DEERING

Dean, College of Agriculture, Orono, Maine, U.S.A.

BEFORE discussing the problems of the production credit system a brief background, at least, is necessary in order that the stranger may understand, in part, the organization that from necessity has grown up in America. It is assumed, however, that most people are somewhat acquainted with the credit system that has been established to assist in financing farmers in the United States, and consequently but little detail will here be given.

The Farm Credit Act of 1933 created the Farm Credit Administration with four financing divisions. These divisions, or farm-financing agencies, are: the Federal land bank, which has operated successfully since its organization in 1917 and deals with farm mortgages or long-term loans; the Federal intermediate credit bank, which discounts the farmers' collateral and obtains its funds through the sale of bonds and debentures to the public; the bank of co-operatives, extending credit to those organizations owned and controlled by the farmer; and the production credit bank, dealing in short-term credit, such as crop and live-stock loans which are repayable within a few years at most and more generally within the crop season.

The production credit system consists of a Federal Commissioner and deputies with head-quarters in Washington, a production credit corporation with its supervisory officers located in each of the twelve regional districts into which the United States is divided, and the production credit associations farmer-owned and controlled, of which there are more than 550 located throughout the important agricultural areas of the United States.

It is a non-profit organization from which any farmer who has a basis for sound credit can obtain a loan at a reasonable rate, repayable at the time the crop or live stock for which the loan is negotiated is marketed. Each borrower is a member and purchases stock in his local association at the time his loan is made. He has one vote as a stockholder. In slightly less than three years of operation the 550 production credit associations in the United States have loaned to 212,970 farmers \$404,557,192 (May 31, 1936).

Now as to the problems this agency faces. One does not need to

say that they are many and varied, for anyone with little imagination and less experience can visualize many of the difficulties to be encountered in extending credit to any farmer having reasonable security, living anywhere in the United States, and engaged in any kind of farming; add to this also the equally difficult task of collecting the loans made during this particularly difficult period when our agriculture has been so out of balance, and one gets a picture of some of the problems involved.

Of course, the matter of personnel is an important one. Given able officials, experienced loan committees, and efficient and trained inspectors, many other problems become secondary. Many other difficulties would also disappear if all associations had a satisfactory volume of business, consisting of a high percentage of good loans. However, these are two problems common to almost any financing organization. For this reason they have, along with others of a local or less important character, been omitted from this discussion.

Those problems which seem to be the larger and common to the entire system will be described in the following paragraphs. Production credit officials, farmers, extension directors, and economists have been approached to secure their views. The eight problems presented and the solutions proposed in no small part represent their offerings.

1. *Quickness of Action.* One of the most immediate problems facing the production credit system is that of rendering quicker service. Farmers want to get money quickly, after they have decided to apply for a loan. No matter how dilatory they have been in making the application, they expect a public agency to render immediate service. They may pay the cost of the original investigations and subscribe for their class B stock without objection if the service is prompt and efficient. Yet they become impatient when additional investigations or delays occur.

The farmer also must build up a more accurate and dependable system of records as well as establish a sound debt-payment record if he is to expect a quicker and more satisfactory service. Greater responsibility for decisions is being placed, and must be increasingly placed, upon the loan committees and officers of local associations. This, more than any one thing, will quicken action. Farmers, secretary-treasurers, loan committees, and bank officials are all aware of the 'red tape' that is now a part of the system.

Regarding the elimination, or at least reduction, of this so-called red tape, Mr. H. B. Munger, President of the Production Credit Corporation in the First District, says: 'We have made some progress in simplification. Much remains yet to be done. As we come to

have a number of years of satisfactory experience with a farmer, I hope that we can accomplish much more in this direction. A reduction in the number of forms used and a simplification of the ones that are used will materially cut operating expenses and improve the service to farmers.'

The problem, then, is one of constant improvement in the mechanics of making loans so that the service may be as prompt, courteous, and sound as farmers may receive elsewhere. Patience will be needed while the system is establishing an efficient and workable procedure and developing sound credit experience.

2. *Flexibility to Meet Individual Conditions.* There is a tendency for any agency whose officials are not actually acquainted with the applicant for a loan to follow a set formula regardless of the financial position of the borrower. This procedure will require mortgages, waivers, subordinations, crop liens, and other details that greatly restrict flexibility. The good farmer objects to this and to the theoretical checking and averaging of conditions upon which his individual loan is approved. He feels that the farm is his, managed and operated by his understanding and experience which has taught him the best way to get results. He objects, when his security is ample or his reputation for debt payment good, to having a plaster placed on all real estate and chattels and otherwise to being subjected to the same restrictions that are required of the applicant with less security and not quite as good a debt-payment record.

The past year has seen a remarkable improvement in the flexibility and the treatment of each case on its own individual merits and conditions. As inspectors become better trained and as loan committees develop good credit judgement, restrictive procedure can be withdrawn and the system made more flexible—at least for the applicant who has established a good debt-payment record and who is yearly in need of production credit.

3. *Present Favourable Credit Situation may not Continue.* The money market is now very favourable to the borrower and, therefore, it is an extremely favourable time for a new loaning agency to become soundly established. If high interest rates later prevail in the money markets, then it is entirely possible that borrowers may be charged a higher rate of interest, possibly 7 or $7\frac{1}{2}$ per cent., unless, during these favourable times, credit agencies place themselves in a position where they can reduce the 3 per cent. spread now prevailing. Should the higher rates prevail and no reduction prove possible in the present 3 per cent. rate, then a problem presents itself in holding the better class of borrowers.

Moreover, when normal conditions return, mortgagees will want reductions on the principal of their mortgages, where indulgence has been shown and only interest has been required. This, together with other fixed charges and needs which the farmer faces, will make it difficult to maintain a favourable debt-payment record unless an unusually favourable price situation for the products he has to sell should prevail.

In other words, the present margin between wholesale and retail credit rates is most favourable and it would seem to be an opportune time for credit agencies to put their house in order, reduce carry-overs to a minimum, build reserves, if possible, and in all cases develop sound loaning and collection methods.

4. *Loyalty or Sense of Ownership.* Most co-operative enterprises have been established only after the ground has been thoroughly worked and the people concerned thoroughly informed. In many instances people have, during this organization period, contributed their time without thought of recompense because of their belief in the venture.

Such efforts or campaigns have not only informed a great many people but have brought to light those individuals, committees, and groups possessing an interest in the enterprise and developed a sense of loyalty to it. This has been a big factor not only in bringing about the organization of the agency, but in supporting it when weather became rough. Moreover, the people invariably connected with such efforts are the real leaders in their communities as well as the best and most respected farmers.

The production credit system missed this experience. It was brought into being through an Act of Congress. Because of the financial condition of our farmers and of the country, it was utilized by large numbers who had no interest in the system or even desired to be associated with it. There was no sense of loyalty or ownership connected with their first affiliation; dire necessity caused them to turn to this source of credit. The production credit system will be faced with a difficult task to develop this sense of loyalty or sense of ownership so necessary and characteristic of successful co-operative enterprises.

In respect to this problem Dr. F. A. Harper of Cornell University says: 'It is going to be a difficult job, in an organization where the contact between the agency and the member is as infrequent as is the case with short-term credit, to maintain a sense of ownership in the co-operative organization. This sense of ownership is very important in retaining volume of business and in keeping adequate participation on the part of members so as to insure continued good management and local efficiency.'

5. *Over-Extending Credit.* Many of our production credit associations during the first year of their existence over-extended credit. This was due in part to lack of credit experience, but more generally due to the non-recovery of business, or the production of surplus products that could not be sold, or other factors outside of the amount loaned. The experience, however, was so general and has been so painful ever since that one would expect great caution on the part of short-time loan agencies.

However, another situation of an entirely different character is now in the making, that may be equally costly unless foreseen and guarded against. This problem is the increasing cost of things the farmer has to buy which, as prices reach the peak, may leave the loaning agency holding the sack if prices tumble precipitously. In other words, the increasing cost of farm equipment, dairy cows, grain, fertilizer, and, in general, any merchandise purchased by the farmer is one of the serious problems before production credit agencies to-day.

While it may have been a sound policy, during the period when the farmer was paying low prices for the merchandise he bought, to loan 50 per cent. of the cost, with rising prices it may not only be unwise but prove disastrous if the same percentage is continued. To loan 50 per cent. on cows selling for \$50-60 is one thing, but to loan money on the same cows at \$150-200 is quite another risk.

6. *Accessibility of Loan Office.* There are approximately 550 production credit associations in the United States. The area served and volume of business done varies tremendously as would be expected during the formative days of such an agency. One of the largest associations has loaned approximately \$3 million, while several have loaned less than \$100,000. The area served in one instance may be small enough to make the loan office accessible to all farmers of that area, and in another instance larger than one or more States combined, so large in fact that the farmer may never visit the loan office. During the first few years, at least, the absence of a set formula is desirable, basing future programmes upon experience. However, there is a decided feeling that, volume of business permitting, the borrower should have easy access to the loan office.

Four officials of the production credit system have expressed themselves as follows on this point: (1) 'To reach the better class of farmers in outlying territories is a real problem and some method of further localization must be developed.' (2) 'I believe there should be a tendency to decrease the area which each association serves. Many of them are now too large. A good farmer does not have to

travel 100 miles to get a loan.' (3) 'I believe that many other problems would naturally disappear if associations could be developed to the extent desired. It would have the tendency to do away with inefficiency. It would help greatly in the time-limit of any individual loan, and to quite an extent decrease the amount of "red tape".' (4) 'Another problem is the location of loan offices to make this service more available than it is at present. I would not be interested in making a couple of eighty-mile trips to borrow a few hundred dollars at 5 per cent. if I could borrow it at 7 per cent. locally. I believe there is need of more associations in order that the service to the farmers may be increased.'

There would seem to be at least three practical ways by which this objective could be attained, trying different methods and then utilizing those which seemed best adapted to the conditions prevailing. (1) Develop to some greater extent than at present the so-called outposts. Here the person in charge would take applications, make inspections, and possibly do general servicing, but would not be responsible for making loans. (2) Appoint assistant secretary-treasurers who would serve the outlying areas of the larger associations. These assistant secretary-treasurers would take applications, make inspections, close loans, and do general servicing in a localized area. (3) Where the volume of business is sufficient, divide the territory now being served and organize new associations.

7. *Education Needed.* One of the real needs for education is to correct misunderstandings as well as to impart new information. As previously indicated, the production credit system was created by an Act of Congress. This occurred at the same time as many temporary or emergency agencies were also born, with the result that a great many farmers, and certainly the public in general, considered this another Federal bureau furnishing government relief. While farmers no longer think of it as a relief agency, not so the public, who still regard it as 'government money' that is being loaned.

An extension farm management specialist says about the need of education: 'Most of our farmers who understand thoroughly the problems of our production credit associations are strong backers of it. However, I have met farmers who through lack of information have criticized the existing policies. This again makes me believe in the need of a lot more educational work in regard to our existing agencies that are extending short-term credit.' There is also the necessity of developing the goodwill of public bodies and establishing better relationships with other loaning agencies. This can be

done in various ways, but the tendency may be to delay or ignore the interest and desire for information on the part of others in the rush of work. Every employee should feel himself a public relations man and do his best to create and maintain goodwill.

A second need of education is to be found in the large number of potential borrowers who are now using merchant credit. This credit is usually very expensive, costing 15 to 20 per cent. on the money borrowed. The farmer borrows from the merchant sometimes because of his inability to get money elsewhere, but in certain instances because he is uninformed as to the advantages of other sources of credit, or because he possesses insufficient knowledge of how to proceed in securing such. An extension economist in one of the potato areas of the east indicates that 80 per cent. of the farmers in one county are using dealer credit for the purchase of seed and fertilizer. He further states that in an adjoining area only 7 per cent. applied to the production credit system for loans, while in another potato area nearby only 4 per cent. applied. It would seem in such cases that proper information would prove helpful to the production credit system and the farmer.

One secretary-treasurer, with twenty-five years of educational background, has this to say: 'I believe that the greatest problem confronting us at the present time and in the future is the educational aspect of this work. In addition to having the farmers understand the system, it is vitally important that the wives of these men become interested and attend the stockholders' meetings. A programme should be worked out also that would reach 4-H clubs and other juvenile organizations.'

Again, there is a third need for education in the wise use of credit. As one secretary-treasurer has so well said: 'Credit used correctly can be a wonderful asset, but credit used incorrectly can be a real liability.' Our secretary-treasurers, our loan committees, and our bank officials must themselves safeguard to a considerable extent the correct use of credit. Our colleges of agriculture and the extension service can and should assume more of the educational work dealing with the wise use of borrowed capital.

8. *Financing Hazardous Types of Farming.* Of the 550 production credit associations in the United States only six or seven have had an impairment of their B stock. This impairment has been wholly or largely confined to hazardous types of farming in the fruit and vegetable areas where violent fluctuations in prices have occurred. The answer to this problem has not been found, but all can agree that credit cannot be extended in the same manner here as in other areas

if the spread is to remain the same, 3 per cent. Other agencies have failed even with 10 to 15 per cent. spread.

A solution can be found. It will probably be different for each commodity or area served. At least the Farm Credit Administration should employ different methods in these hazardous areas and not be too greatly disturbed if they do not each work out 100 per cent. perfect the first time employed. (1) It may be that the amount of credit can be restricted so that the loans per acre are small, though pressure groups and a few years of low prices make this plan sound difficult; (2) it may be possible to create reserves to help to take care of losses on this type of loan; or (3) there is some possibility of controlling the security, i.e. the crop produced, and marketing this through an agency approved by the Farm Credit Administration. The last method, at least, has been tried out in a very thorough and extensive manner this past crop year by one of the largest associations in the system. Much good has resulted from this experience, to the association, to the borrower, and to the area served.

As previously indicated, efforts to find the solution to this problem should not be confined to one particular method, but the plan which seems the best adapted to the particular commodity or area should be given a thorough trial.

In conclusion, extracts from certain letters received will be quoted to indicate, in general, that underneath all the problems which production credit faces, the 'man in the street' is thinking favourably of the system. The following are a few of the statements that have been made:

'... being a farmer I know that this production credit service is one of the most outstanding services ever rendered the farmers. During the past few years of depression when the agricultural class really did have need of some financial assistance, the banks failed them.'

'Our business this year decidedly indicates the growing confidence in the minds of the agricultural people with respect to our production credit associations. A better class of borrowers, who were reluctant to come to us at first, are now doing so, and they seem to have a sincere appreciation of the service we are rendering.'

'From my contact with farmers I would say that the production credit system meets with their whole-hearted approval. It is the first time that many of them have been able to borrow from a loaning agency at a reasonable rate of interest. It is the first time that practically all of them have been able to borrow on a repayment plan timed to fit their particular income. The most frequent comment is that it is a godsend. There has been some criticism, but it has to do more with the mechanics of the system and is of a minor nature. These are being corrected.'

DISCUSSION

W. SEEDORF, *Göttingen, Germany.*

I am very glad to have had the opportunity of listening to the papers given this morning and I have learnt a great deal from them. On a visit to the U.S.A. in 1930 I tried to acquaint myself with their credit system in the limited time at my disposal.

There are two points which I would like to refer to regarding this morning's papers. The first is to make a distinction between 'production credit' and 'consumption credit'. The other is to mention the outflow of capital from the countryside to the towns.

In Germany we try to keep agricultural credit at as low a level as possible and to avoid it, if we can. The farmer or peasant should earn enough in his lifetime to be able to do without other money. The need for credit is not, however, entirely eliminated. We wish that, as far as possible, the farmer should demand only 'production credit'. There will always be a call for it, if openings are to be found in farming for capable young farmers without means of their own, and it will always be required when large innovations in farming are to be made. That is the position as it occurs in all countries. But is not a great deal of the credit flowing into agriculture to-day 'consumption credit', used only to pay off old debts which have arisen partly because the farmers had spent too much or earned too little? 'Consumption credit' can chiefly be restricted, as Dr. Windirsch has said, by seeing that farming remains profitable. But it will also be dependent on our being able to make the farmer efficient, so that he understands his job and is capable of getting yields from his land that can cover expenses.

Turning now to my second point, I wish to refer to the outflow of capital from the countryside. If I may use the example of myself, I may assume that part of the capital invested in my education was 'productive'. This capital all flowed into the town and only partly does it benefit the countryside in the form of education of the farmers. This ultimate destination of rural capital has already been mentioned in one excellent paper, and it was pointed out that if all capital formed in the countryside remained there a large portion of the agricultural credit requirements could be met by this capital of rural origin.

What is the destination of capital of rural origin? I cannot review all countries, but briefly what has happened in Germany is that people leave the country for the towns and that industry flourishes

on the fine men continually being given by the countryside. Not only have these people left the country, but with them the capital spent on their education is lost to the countryside. Not only is this capital lost to the countryside, but also the capital they took with them in cash settlements or in equipment. Very substantial sums are thus permanently lost to the countryside and must continually be replaced. Again, farmers and peasants, at any rate in Germany, did not, as long as they had ready money, always reinvest this money in their farms; to a great extent they placed these sums at the disposal of industry by buying shares, not only German shares, but to a great extent also foreign shares, as, for example, the large sums invested in railroad shares in America and other countries.

One other point I would like to add. There is one respect in which we are in a worse position than America. It struck me when I visited that country in February 1930, after the crash on the stock exchange of 1929. In travelling through the country, I noticed that many farms were in the hands of life assurance companies. This was for me quite a novel feature, for I know—and have proved it by inquiries—that our German insurance companies invest scarcely any part of their capital in rural mortgages, but rather invest it all in urban and industrial mortgages. In this manner also, much of the capital created by the peasants in the country is lost to the countryside. I think that these aspects of the problem well merit a certain consideration in our discussions here.

C. R. ARNOLD, *Deputy Production Credit Commissioner, Farm Credit Administration, Washington, D.C., U.S.A.*

There are just one or two things that I would like to mention, since I have been asked to make a remark or two here, and we have only a few minutes before time to close the session. These are going to be based largely upon the questions which came to me during the last intermission, and they are confined to just a little further explanation in regard to some of the mechanics or the operations of the one phase, short-term credit, in which I am specially interested and happen to be working with at Washington.

I have been asked if this programme is new. It is new in the United States, and I presume somewhat new generally. The first production credit associations in the United States were organized three years ago. In the short-term production credit system in our country, no loan is made for a longer period than twelve months. One of the questions asked during the intermission was in regard to who makes the loans. Our office in Washington, the production

credit division, cannot make a loan; neither can these production credit corporations, twelve of which are scattered over the country. All of the loans are made by the local associations described by Dr. Hill. They have a board of directors elected by the farmers themselves, and are not under political control. The money is paid out of their own funds. The rate at which they make loans is set at a certain percentage above the rate which they pay the intermediate credit banks. The local people have the final say in regard to all loans. This is an attempt to make it as nearly as possible, and as quickly as possible, strictly farmer-owned and at least farmer-controlled.

Another question was asked about the B stock that has been referred to. I will not go into any details of that as it is a little complex, but I will just say this. The sum of \$120 million that was appropriated by the Federal Government was placed in bonds and is used as additional collateral in borrowing from the intermediate credit bank when these farmers' notes are discounted. The B stock is the stock the farmers' own, and must equal 5 per cent. of the amount borrowed. The stock which the Government or corporation owns is the A stock mentioned in the paper. The latter carries no voting power. When any bad loan is made and any loss is sustained, it must come out of the farmers' B stock. Losses must first be taken out of the farmers' stock until the association is completely wiped out, before any loss is sustained by the Government money at all. There happen to be eight of the 556 associations in the country which have sustained some loss up to the present time. These were referred to by Dean Deering. In each instance that loss has been taken right out of the stock that the farmers themselves put into it, and must be rebuilt before that association can set up reserves.

Only one other point. At the present time there are something over 200,000 members of the production credit system in the United States, approximately one farmer out of every thirty in the country. The point that was emphasized this morning, namely, that these people may be members because of necessity rather than members because of their co-operative desire, is a very essential one. This system of production credit will live or die largely on the point that Dean Deering emphasized regarding education and the necessity of having farmers understand the need of developing their own short-term credit system to take care of them during bad times as well as during good times. Very much depends upon the educational phase, and I am sure that in our experiment of the last three years we have not gone as far with the educational work as we should. This past

year, mostly during January and February, every one of these 556 local associations in the country held an annual meeting. Over 80,000 farmers attended these meetings at which a definite educational programme was presented. An attempt is being made to develop the educational phase of that programme which is absolutely essential for the success of the production credit system.

COMMERCIAL POLICY AND THE OUTLOOK FOR INTERNATIONAL TRADE IN AGRICULTURAL PRODUCTS

OPENING ADDRESS

A. CAIRNS

Wheat Advisory Committee, London

I THINK I ought to explain why I am opening this discussion on 'Commercial Policy and the Outlook for International Trade in Agricultural Products'. Several weeks ago I wrote to the secretary congratulating him upon the programme which had been drawn up for this conference, and pointing out that I thought agricultural planning in countries dependent upon export markets for a large part of their agricultural production would remain extraordinarily difficult as long as agricultural economists in those countries held such widely divergent views regarding the probable volume of agricultural exports in the next five or ten years. In reply I was asked to open a discussion on this subject with an informal talk.

In order to provoke discussion, I shall be rather dogmatic. I shall not discuss commercial policy because there are many people present who are very much better qualified than I to do so. Most of my remarks will deal with the outlook for international trade in wheat. I realize that because wheat is my subject my views regarding the outlook for the export of agricultural products as a whole may be too pessimistic, but I expect other speakers will correct this bias.

During the past ten years I have associated a good deal with agricultural economists, agricultural administrators, agricultural policy formulators, and agricultural politicians in many European and overseas countries. In the past five years I have travelled widely in practically all the countries of Europe, including the U.S.S.R. and the Danube Basin. My experiences have compelled me to take a profoundly disquieting view of the outlook for international trade in wheat during the next decade.

Before giving you the principal reasons for my pessimism, I would like to refer to the excellent papers delivered by Professor Scott and Mr. Enfield at the opening session of this Conference. I am not satisfied that the conflicting implications of these papers can be reconciled by distinguishing between the long- and short-term points of

view; to my mind a much better explanation is their difference of opinion regarding the applicability to present-day conditions of the analyses of the classical economists. You will recall that Professor Scott's analysis led him to formulate reassuring conclusions regarding the future trend of agricultural welfare, whereas Mr. Enfield's analysis led him to draw a discouraging picture.

Let me illustrate a similar divergence of opinion. When I was in Canada in the summer of 1935 I read in the newspapers a speech by a prominent public man about the wheat outlook. In effect he said: 'If I for one moment believed that the consumers of France, Italy, and Germany were going to continue to be so stupid as to allow their governments to deprive them of the advantages of relatively free access to high-quality overseas wheat, then I for one would advocate the closing up of Southern Saskatchewan in order to avoid further financial loss.' Apparently the implication of this statement was that as a revolt of European consumers was just round the corner it was quite unnecessary to reduce Canadian wheat acreage. On March 1 last the Secretariat of the Wheat Advisory Committee circulated to governments an elaborate study of world wheat consumption. The conclusion of that study was as follows:

'An improvement in the standard of living of oriental peoples *may* be accompanied by an increase in the amount of wheat they consume. An improvement in the standard of living of occidental peoples will probably, on balance, be accompanied by a *decrease* in the amount of wheat they consume. Every possible effort should be made to increase wheat consumption in those countries where it is not already the principal cereal in human diet. And no opportunity of enlarging the consumption of wheat by livestock should be neglected. But we consider it illusory to expect the world wheat problem to be solved by methods designed only to increase consumption. In our next review of the world wheat situation we shall reinforce the argument of our September 1935 review, that despite the superficial signs to the contrary the world is moving *into* and not *out of* a wheat crisis. Obviously every possible effort should be made to increase consumption, but in the absence of international co-operation designed equitably to share the task of adjusting production and export to effective demand, extremely low prices and much needless distress must, given average yields, be the lot of wheat farmers in surplus-producing countries.'

The point I wish to stress is; how can governments and producers be expected to plan intelligently agricultural production programmes if the disagreement between economists is as wide as that between Professor Scott and Mr. Enfield, or between the two commentators on the wheat situation to whom I have just referred?

I have not altered my opinion about the long-term world wheat

outlook since writing the above-quoted conclusion of our study of wheat consumption. The terrible damage wrought by this year's drought in the United States and Canada has brought temporary relief to the world statistical position, but it has made a solution of the wheat problem more and not less difficult. High wheat prices and the need for autumn pasture will probably result in a record high acreage being sown to wheat for the 1937 harvest in the United States.

My reasons for taking a very discouraging view of the outlook for international trade in wheat in the next decade may be classified, roughly in the order of their importance, as follows:

1. In many countries wheat and politics are now almost synonymous terms. Wheat has been subjected to far more political doctoring than any other agricultural commodity. Wheat is the principal cash crop of a large group of farmers. In many countries this group is politically very powerful. In some countries this group has still to exercise its full political force. With the return of low wheat prices we shall not have long to wait to see this force exerted to the full. There is a price below which the governments of overseas and European exporting countries dare not let wheat fall. In most countries we have political wheat prices; in few, if any, are wheat prices now determined by the free interplay of world supply and demand factors. We might as well frankly face up to the fact that, in the case of wheat, price does not perform the role assigned to it by the classical economists; it simply does not act as a regulator of supply to effective demand. An increase in wheat prices generally produces an increase in wheat acreage. But a decrease in wheat prices does not bring about a decrease in wheat acreage; it generally produces an increase in direct or indirect government assistance to wheat growers.

2. My second reason for being so gloomy about the wheat outlook is the international repercussions of the purely national attempts being made by many countries to solve their domestic wheat problems. In each of the past three years wheat grown in European 'importing' countries has been exported to Great Britain; these heavily subsidized exports have depressed the price of wheat imported from normal exporting countries. In 1933-4 Germany was a substantial net exporter of wheat; in 1934-5 France was a large, and Sweden and Latvia were substantial, net exporters; in 1935-6 Portugal joined the ranks of net exporters; and in 1936-7 Czechoslovakia will probably be a new recruit.

3. My third reason for taking a dark view about the outlook for

international trade in wheat is the phenomenal improvement during the past decade in the productivity of European agriculture. Overseas farmers made great strides during and immediately after the War in increasing their agricultural output per man. In the past ten years European farmers have made similar strides. The widespread use of labour-saving machinery, improved selection and breeding of new varieties of cereals, the use of more and better fertilizers, and the much greater attention being paid to the teaching of government agricultural advisers have all made an important contribution to the increased output per unit of land and labour. Since the War large new vested interests in secondary industries have been created in the overseas countries; simultaneously large new vested interests have been created in European agriculture. Ten million Frenchmen and a large proportion of the population of the continent of Europe depend directly or indirectly on wheat-growing for their principal means of livelihood. No amount of argument about the mutual advantages of free trade, or about anything else, will induce these people to give up growing 'high-cost' wheat in order to make room for 'low-cost' wheat from overseas countries.

4. My fourth reason for believing that international trade in wheat in the next decade will be very much smaller than in the post-War decade is the striking downward trend in *per capita* consumption of wheat in many countries. Incidentally, I hope a session of one of our future conferences will be devoted to a discussion of the probable effects on agriculture of the reduction in the birth-rate of very many countries. We certainly cannot expect the next few decades to be like the past few, when an increasing population took care of an increasing agricultural productivity. On the contrary, we may anticipate that a declining rate of *per capita* consumption of wheat, together with a declining rate of population growth and an actual decrease in population in some countries, will present increasing difficulties to the major wheat-exporting countries.

While I am convinced that the only permanent solution of the world wheat problem is to be found in international co-operative action, I fear that further nationalistic attempts will be necessary in order to demonstrate the futility of such methods. In European importing countries these nationalistic attempts at solution will probably take the form of maintaining high prices by tariffs and quantitative restrictions against imports; when these high prices, together with favourable weather, result in surplus production, the surpluses will be pushed by export subsidies into the United Kingdom and other deficit countries. In European exporting countries

these attempts will probably take the form of maintaining minimum prices by various types of processing taxes and by barter arrangements with European importing countries; an attempt will probably be made by these countries to organize some kind of a pan-European preferential customs arrangement. In overseas exporting countries these futile attempts to find a nationalistic solution will probably take the following forms: praying for 'providential disasters' to other countries' crops; maintaining production in the vain hope that one or more of the big wheat exporters, discouraged by low prices, will drastically reduce acreage; competing for export markets by underselling competitors and soothing wheat farmers with minimum prices and export subsidies; decreeing drastic reductions in agricultural indebtedness; and granting various forms of direct and indirect relief to exceptionally hard-hit wheat producers.

But I believe two or three years of price-cutting, supported by competition between States in providing export subsidies, will be enough to teach overseas farmers and their governments that a solution of the wheat problem cannot be found in unco-ordinated nationalistic measures. When that time comes we are, in my opinion, going to see an increase rather than a decrease in governmental control and regulation of production, marketing, and exporting. It is because I am convinced that such a tendency is inevitable that I would like to see agricultural economists paying far more attention than they do to the factors which determine the volume of international trade of such agricultural staples as wheat.

If such countries as Argentina, Australia, and Canada cannot at least make an approximate estimate of the likely volume of their wheat exports in the next few years, how can they be expected intelligently to reorganize their agriculture? Yet such reorganization is sorely needed because at present plans are being made to produce wheat for which there is unlikely to be any demand, let alone a demand at remunerative prices.

During the ten-year period 1923-32 Canada's exports of wheat and flour averaged 282.3 million bushels per year. They dropped to 194.4 millions in 1933-4 and to 165.8 millions in 1934-5. Owing to a crop failure in the Argentine and to large imports by the United States they were increased to 254.4 millions in 1935-6. In my opinion Canada's exports are unlikely to be more than 200 million bushels per year in the next few years. Yet the acreage sown to wheat in Canada in the next few years will probably be sufficient to produce, assuming average yields per acre, from 75 to 100 million bushels per year in excess of the probable domestic and export demand. A some-

what similar situation exists in the Argentine, Australia, and in the United States. The solution of this problem is going to be extraordinarily difficult. It will involve a lot of planning and the adoption of an agricultural policy. But the point I really wish to make is that there will be no planning and no agricultural policy until public opinion in Canada ceases to think that normal years are ones in which Canada exports upwards of 300 million bushels of wheat. But, alas, many influential people in Canada still publicly support the popular view that Canada can find markets for as much wheat as she can produce, and that it is only cranks who talk about the need for reducing wheat acreage!

In 1931 a Royal Commission, under the chairmanship of Sir Josiah Stamp, investigated some aspects of the Canadian wheat problem. I had the privilege of addressing the Commission on behalf of the three Wheat Pools. The central theme of my statement was the inevitable growth of government regulation of production and marketing of agricultural products. So far the facts have fully confirmed my 1931 forecast. It is, of course, true that we are more liable to get government control in times of depression than in times of prosperity. General economic recovery in the next few years may be accompanied by a relaxation of certain types of official control. But, except in the event of a general war (the dangers of which appear to have been grossly exaggerated in overseas countries) I cannot see signs pointing to prosperity in the next few years for overseas wheat growers. I see, therefore, no good reason to anticipate, in the case of wheat, anything but a temporary slackening of the tempo of government control. Much as I would like to be able to do so, I cannot accept the popular Argentine and Canadian view that the recent catastrophic decline in the volume of world wheat exports is a temporary phenomenon associated with the world monetary and economic crisis, and that such exports will soon reach, or, at least, closely approach, their former post-War volume.

Rational production and marketing plans will not be formulated until we squarely face up to several disquieting realities. One of these realities is that although world trade in wheat and flour has fallen steadily year by year from an annual figure of approximately 800 million bushels to a figure in the neighbourhood of 500 million bushels, no appreciable change has taken place in the area sown to wheat in exporting countries; it is still at a level sufficient, given average yields, to furnish an annual exportable surplus of about 300 million bushels more than the figure for which there is likely to be an effective demand. If we disregard the accidental imports

by the United States, 1935-6 world trade in wheat and flour was only about 480 million bushels; in 1936-7 it is unlikely to exceed 525 million bushels. Had yields per acre in the past four years been average, world stocks of wheat at the end of the 1936-7 crop year would now appear likely to reach a figure in the neighbourhood of 2,000 million bushels. Owing to four successive very short crops in both the United States and Canada, and to the very poor crop last year in the Argentine, world wheat stocks in August 1937 will probably be down to normal proportions (i.e. about 625 million bushels).

I do not share the views of those who hold that the wheat-growing areas of the United States and Canada have been permanently and seriously impaired by recent droughts. I know of no good reasons why we cannot anticipate normal unit yields in the United States and Canada in the next few years. Normal unit yields in these countries will certainly mean increasing stocks, decreasing prices, and a serious worsening of the agricultural depression in the grain-growing areas of the overseas and European wheat-exporting countries. Present wheat prices are fairly satisfactory, and the present stock position has produced the first real sellers' market we have had since 1927. But if it takes four successive very short crops in the United States and Canada, a crop failure in the Argentine, and two years of large imports by the United States to reduce world wheat stocks to normal proportions and to produce dollar wheat in Winnipeg, what do you think the price of Canadian wheat will be when Canada and the United States have produced two normal crops and the United States' net exports reach 100 million bushels per year? There is to-day a widespread tendency in both overseas and European wheat-exporting countries to ignore this question. Some people think the answer to the question is that the factors which caused the last wheat crisis were temporary phenomena and that we need not fear another wheat crisis because we shall soon be enjoying the former volume of international trade in wheat and flour. Other people think that such questions are only put by woolly-headed planners and socialists. If two years from now the answer to the question is 60 cent. wheat, then we woolly-headed planners will at least have the satisfaction of saying 'I told you so!'

The steel, shipping, tin, rubber, cement, coke, and other industries have recently benefited from international agreements designed to control exports and prices. Despite the enormous difficulties to be overcome, I am still hopeful that overseas wheat producers and their governments will eventually follow the example of the steel and other industries. But I fear that another severe wheat crisis will be neces-

sary to create the sort of atmosphere which appears to be necessary to negotiate such international agreements.

In conclusion I would like to express the hope that my remarks have been sufficiently provocative to stimulate those who disagree with me to get up and state why. I need hardly add that throughout I have been expressing merely my own personal opinions, and that my remarks should in no sense be interpreted to represent the views of the members of the Wheat Advisory Committee.

DISCUSSION

H. C. TAYLOR, *Director of Farm Foundation, Chicago, U.S.A.*

I share with others the doubt that rational economic policies relating to international trade will be given serious attention in the immediate future by those who determine the policies of nations, but I feel sure that it is our duty as agricultural economists to continue our studies and promulgate a rational view of international relations. An unprejudiced study of the situation turns on, as it were, the light of the facts of the world in which we live, in such a manner that this light will be seen by all who participate in the production and marketing of agricultural products and who administer, through governments and otherwise, the affairs connected with the production and marketing of farm products, in order that, when in due course of time people generally recognize how bad things are, there will be somebody who has been studying the matter and who will be able to plan on the more rational lines which, admittedly, cannot be brought into use at the present time. Without being a dyspeptic, in fact being one who has always believed himself an optimist, I too find myself somewhat of a pessimist about the speed with which things are likely to improve.

When I returned to the United States last November, after more than two years' absence, I was astonished to find the opinion of many of our people with regard to the attitude of mind of people in Europe. One who has been living in Europe has a very different point of view from those who have been continually living in the United States. How are we to get a better international understanding such as will give a basis for international action along more rational lines than much of our planning even purports to be? Last April I met a great many people in western Iowa and eastern Nebraska, which is rather typical of the corn belt, and also in a part of the wheat area. The thing that depressed me was to find many people in that area inclined to take the position that we have lost

our foreign markets for lard and for wheat, and the thing to do is to fight for 100 per cent. of the domestic market. They then quoted absolute figures, not percentages, for values of the amount of Polish ham coming into the United States. It might be a mere fraction of the total ham supply, but the figure itself looked sizable. And then with regard to many similar products, the relation between those farmers and the south, the cotton belt, was something that was being entirely overlooked; the cotton belt farmer's market is important to the corn belt farmer in determining what the cotton belt farmers can buy from the farmers of the corn belt. Now while it is true that this situation exists, there are men in that area who are convinced that this is an irrational point of view and are starting cheerfully an educational campaign to help those people to understand the situation.

Am I right in believing that the United States is in a considerable measure responsible for the situation that exists in Europe in that our foreign trade policies have had a reflex upon the foreign trade policies of Europe? I asked Professor Scott this morning before he left, if he thought the time was entirely past when a more liberal trade policy on the part of the United States would have the effect of bringing back the trend, in some measure, in Europe. His reaction was that it was not too late if the move was made quickly, but of course much damage had been done, and the influence of our action, while not by any means the whole thing, had been an important factor in the European situation. If that is true, I hope that activities which are already planned for educational work, particularly in the Mississippi valley, where a special meeting of all the farm leaders in December may be the beginning of an educational campaign that will help the cotton belt and the corn belt to see together with regard to the importance of foreign trade if they are to carry through. Now this relates primarily to lard and cotton rather than to wheat. I am ready to admit that the wheat situation is far more discouraging than the lard situation or the cotton situation. But while I feel that much must be done along the line that Mr. Cairns has mentioned, do, please, not discourage those who believe it is worth while to carry forward our thinking, looking towards the longer-time plan and the plan on ahead of the immediate, as well as giving much attention to the present immediate problem and the methods of handling the planning for the present; and may I say that I am ready to hold in the highest regard and respect those who are working on the short-time programme, and would ask simply that they likewise hold in high regard those who are interested in the long-time programme and see if we cannot under-

stand each other and probably learn from each other something that will be worth while both for the immediate and the more distant future.

L. A. WHEELER, *Bureau of Agricultural Economics, Washington, D.C., U.S.A.*

Mr. Cairns suggested that any one who did not agree with him should get up and speak. Unfortunately I agree with him; I also agree very largely with what Dr. Taylor has just said. I think it is quite important. We cannot over-estimate the importance of distinguishing between the different agricultural products in this question of the future outlook for international trade. There is a noticeable tendency, it seems to me, to consider that the wheat question is really *the* question to consider in the outlook for agricultural exports and international trade in agricultural products. I agree pretty well with Mr. Cairns's sizing-up of the wheat situation, but I think that, as Dr. Taylor pointed out, the situation is not nearly as gloomy, from a short-time or from a long-time point of view, with respect to other agricultural products in which the United States at any rate is interested, such as cotton, tobacco, possibly fruit, and lard. That all depends to a considerable extent upon the commercial policy of the United States. Not much has been said about that.

As all of you undoubtedly know, there is a programme in effect in the United States at the present time, which we call the Trade Agreements programme and which is intended to work along the line of a more liberal trade policy. It has, I think it can be said, met with some success. At any rate agreements have been concluded with fourteen countries. Six of them are, I think it is six, in Europe, and seven in Latin America. From the standpoint of agricultural exports from the United States it is quite obvious that it will not be completely successful unless a way is found to conclude agreements with Great Britain and Germany. After all, those are the two large foreign markets for American agricultural products. Those two countries have not been included up to the present time. Canada has been included; it is an important market for some of our agricultural products, and we are at least potentially an important market for some of the Canadian. The reception that the Canadian agreement has received in the United States makes it quite clear that there is no practical likelihood of going ahead with a Trade Agreements programme that does not involve primarily from now on concessions by the United States in industrial products. I think this is as it

should be. We have not as yet dealt with the primary industrial countries. I speak of course from the point of view of the Department of Agriculture. There is, I think, reason to believe that, by pursuing the policy of the Trade Agreements programme for the next two or three years, it is possible to do this. (After all, the Trade Agreements Act expires in, I think it is, June 1937). It will be possible substantially to improve the outlook for agricultural exports from the United States, and I see no reason why the same principle could not apply in other countries. But it is going to be a very difficult thing to do. Dr. Taylor mentioned the Polish ham. I happen to occupy the position of having to handle, at one stage or another, most of the letters that come into the Department of Agriculture about Polish ham, so I know a good deal about that subject. I know a good deal about the attitude of the people, at least in the Middle-West, about it. That is equally true in regard to other agricultural products. But usually when one examines the situation carefully, as we tried to do, one finds that the imports are of little significance from the standpoint of the price received by the American farmer. There are some exceptions to that, but Polish ham is not among the exceptions, and some of those which raise the most difficulty are of the least importance; that is why I think it is extremely important in the United States to go forward with some such programme as Dr. Taylor indicated, trying to educate the American farmer, particularly in the corn belt, as to the importance of foreign trade. This is beginning to look like just repeating in other words what Dr. Taylor said, but I do agree very thoroughly with his remarks. I think they are fundamental. He also mentioned the question of cotton. That is to me the most important consideration so far as agricultural exports in the United States are concerned, and it is just as important in the Middle-West as it is in the South, but unfortunately up to the present time the farmers do not understand that.

In conclusion I would say that I agree with Mr. Cairns in regard to wheat. We undoubtedly are headed for some further difficulty, it seems to me, with regard to wheat unless, as some people say, the weather has permanently changed, and we are going to continue to have droughts in the Northern Hemisphere right along. Of course if that happens I think the wheat problem is solved. If that is not the case, then I think there will be a wheat crisis of some kind and it will need some sort of planning, some rationalization. But I am not nearly as pessimistic with respect to other agricultural products, at least those with which I am familiar, in the United States exports.

I. DE ARLANDIS, *Madrid, Spain.*

In discussing the foreign trade in agricultural products, I would like to suggest that, before we enter into special questions, we might state what general tendencies of modern foreign trade we admit or recognize. I think that the tendency, which spreads all over the world and which depends much more on political than on economic reasons (sometimes it is all the contrary of 'economical'), is, first, to secure a base of home food production. The importation of foreign agricultural products is graduated after the national food production. The Germans call that *Nahrungsfreiheit aus einiger Scholle* (own food produced in one's own country), and the purpose is not to *depend* on imports of foreign food.

Second, the regulations, plans, and interventions for foreign trade must be followed by nationally planned production. And the nationally planned production cannot have any other result than a planned foreign trade or exchange. I believe that, mainly because of political and social reasons, there will be no way back to the free-trade system.

E. M. H. LLOYD, *Market Supply Committee, London.*

I feel it is up to somebody to try to differ with Mr. Cairns, since he has challenged us. I should like to ask him why precisely the present situation is dark. It might be argued that, if it were not that the plans of the Wheat Advisory Committee to restrict acreage or to restrict supply had broken down, the world would have suffered an acute shortage of wheat owing to this succession of bad harvests; but since, in spite of the efforts of the Wheat Advisory Committee to restrict acreage, the acreage has not been restricted, we have managed to survive these bad harvests without an acute world shortage.

Now as regards the future I do not quite follow in what respect the outlook is dark. What is it that Mr. Cairns is afraid of? Does he feel that there is not enough planning and government interference, or that the world is suffering from too much planning and government interference? In other words, does he want to have restoration of freer trade throughout the world (he cannot expect to have freer trade in wheat alone—there must be a general revival of free trade, which means a reversal of present trends and turning back towards *laissez-faire*), or does he look for further developments in the direction of government interference and government control, and if so of what kind? In his reply he will no doubt be able to develop that, because I am sure he has got plenty to say about it.

May I suggest one other doubt about this prospect that we are in for a period of continued impasse? It is the unexpected that is always happening in economic affairs. The economist may be a good analyst and good at diagrams, but he is not generally very happy at prophecy. Mr. Cairns and others are prophesying continuance of the crisis and the impossibility of getting back to freer trade conditions. I would like to suggest that partly owing to the lack of adequate control of the monetary machine throughout the world we might get a very sharp inflation. With a general rise in the price level the situation would be quite transformed, and even the wheat situation might change if the primary producers had some other outlet or if some other commodity proved more attractive owing to stimulation of demand by inflation. The wheat acreage might then contract automatically. And, moreover, if prices did rise internally with a runaway expansion of credit, then the governments would cease to be preoccupied with the woes of producers and would have to pay attention for political reasons to the effect of high prices on consumers. That is almost certain to come in the course of the trade cycle. We shall have governments preoccupied with the high cost of living and the need for controlling so-called profiteering by primary producers. When that time comes, one of the instruments by which governments will try to bring down the cost of living and make it easier for consumers will be to relax the present restrictions which have been imposed in the interest of producers and even to allow freer imports, particularly of foodstuffs. Far from me to be dogmatic on this point, but, as Mr. Cairns has challenged us by his dogmatism, I put this forward as at least a possibility.

Looking further ahead, I suppose that many of us feel that the restoration of the Cobdenite ideal of automatic adjustment of supply and demand on a world-wide basis by free movement of goods and of labour and of capital is hardly likely to be realized in our lifetime. If so, are we not always in danger during this transition period of suffering a succession of crises due to inadequate and imperfect planning? One of the previous speakers has said that one of the difficulties at the present time is that, while all economists agree that the present situation is unsatisfactory, they will not agree even on first principles in which direction we are to proceed, whether in the direction of freer trade and more *laissez-faire* or in the direction of more scientific and controlled planning.

In the case of wheat I think all of us feel that the efforts of the Wheat Advisory Committee to bring some rationalization into the production and trade of wheat will continue, and by trial and error they

may eventually achieve some rational *modus vivendi*. But I should like to suggest one point to Mr. Cairns, that, in view of the extreme instability of the weather and its effect on wheat crops, the Wheat Advisory Committee will make as good an insurance as possible against the risk of bad harvests affecting many important areas, and will consider the possibility of building up an international reserve big enough to tide us over any danger of bad harvests. Any attempt to tie governments down to a particular acreage or particular quotas of production is apt to go very wrong unless there is some international reserve that can be called upon to make good deficiencies due to nature. Then, if we were considering a rational plan for wheat, I would like to ask Mr. Cairns whether he feels that we want more or less wheat. Taking a long-term point of view I suggest that we want more wheat. We want to increase consumption in the world even of wheat; there is scope for immense increase in the standard of living, including consumption of wheat. In the East it may not rest with the Wheat Advisory Committee or with the wheat producers to solve the problem of how to enable the Chinese to consume more wheat, but at any rate that is a problem for those concerned with commercial and economic and monetary policy. Then, moreover, we want to increase consumption of wheat for live stock in order to increase the production of live-stock products which even in Europe are not consumed to anything like the extent required to maintain an optimum health for the population.

Lastly I do feel the crux of the matter, which we want to face up to at this international conference, is whether government interference and government planning on a national scale can possibly solve problems of international trade of this kind. We must aim at an international plan and an international solution of our problems and not expect that government planning confined to some particular political or territorial area, which has very often no relevance to economic conditions, can do anything else than put a spoke in the wheel.

R. GARCÍA ARIAS, *Argentine Embassy, London*.

Mr. Cairns has been riddled with questions; nevertheless I am venturing to add one more to the series that his statement has provoked. I will refer myself to the wheat problem. It seems after what we have heard that the solution of this international problem could only be found by reducing production, or increasing consumption. In the last three years we have been mainly considering reduction of acreage as a means of reducing production.

Bearing in mind that at this Conference delegates are not supposed to express the opinions of governments or of any other institution, I would like to ask Mr. Cairns to state his opinion about the possibility of solving the problem by means of acreage reduction; if it would not be advisable to undertake the education of the peoples concerned with regard to the causes which have provoked the past over-production, as well as the participation of each country in the same. The knowledge of the different factors which led to the present position may enable the parties to approach the problem of acreage reduction in a spirit of equity when it comes to outlining a plan or programme under which the sharing of the sacrifice is allotted.

I think that if public opinion is not prepared beforehand in the different countries regarding what is the equitable formula for acreage reduction, it will be impossible to enforce any plan aiming to solve the international wheat problem by adjusting production to demand.

F. E. GELDENHUYS, *South African Legation, Rome, Italy.*

I do not want to speak on the question of the particular products that have been mentioned here, but I should just like to point out one fact with which we are faced in the world to-day; and I would like to get the suggestion from some of the members of the Conference as to just how we are going to get over the particular difficulty. It seems to me the one big problem that we have to deal with is that each country is trying to create a position in which there will be an excess of exports over imports. Now that is actually the problem; each country wants a favourable balance of trade. If we can get some means of solving the position so that each country can have that surplus of trade and not have a deficit, then I think we will have solved the problem.

J. E. LATTIMER, *MacDonald College, Quebec, Canada.*

In spite of the excellent address of Mr. Lloyd I believe that we are letting Mr. Cairns off too easily if we do not disagree with him a little more definitely than we have. Perhaps it is because he is an old student of mine that I want him to get a little more criticism and have a little more chance to show his mettle. I do not personally take nearly as pessimistic a view as Mr. Cairns on this wheat situation. I think that he has 'soft-pedalled', if you will allow me to use the expression, the reduction in the acreage that has taken place recently. If we add together the acreage for the three countries, Canada,

Argentina, and Australia, the three major countries in the export market at the present time, we shall find, if I am rightly informed, that the acreage reduction has amounted to ten million acres (recent preliminary figures compared with the highest point of acreage). That seems to me a very substantial reduction. Now Mr. Cairns says that we have the rising price of wheat simply and solely on account of the fact that we have had very scarce harvests and bad years. It is only a very few years ago that we—at least some people—were saying that we had the surplus solely on account of extraordinary good yields. Now we can hardly have it both ways. If we take the world acreage and world production figures with which we are all familiar (having been supplied by the Food Institute at Stanford University) and take the yield for ten years and figure it out, we find that about three-fifths of a bushel per acre is the variation in yield. Fortunately world crops do not fail, but of course if we take a small area like Canada or Argentina, or Australia, we find a very great variation.

There is another point I wish to mention. It was calculated at one time that the increase in world trade in wheat amounted to about 30 million bushels per year. Instead of this we now have a reduction in international requirements. Yet the volume of international trade has probably not declined any more than domestic trade in some countries, and has held up fairly well in volume when considering its handicaps. I am rather inclined to think that there are two reasons for the reduction in the international trade which has taken place. One was the fact, already alluded to, that most of the countries had an adverse balance of trade in 1929, and now they all want to have a positive balance because they have to. The curbing of the international flow of credit stopped this trade. We could do a lot of trade now if we were willing to take IOU's. But if you want to sell or buy goods for goods, it is a very different thing. New Zealand, which has been contributing cheap food, investigated its position not long ago, and the Royal Commission reported that unless and until prices rose, and if they did not rise very promptly, New Zealand would be unable to meet its foreign commitments. I submit that Canada is somewhat in the same condition. We have borrowed a lot internationally. What have we borrowed? Money? No, we borrowed command over goods. We took goods. And now, when we are ready to pay back, people do not want the goods. It may be hard to collect the debts if goods are refused in payment. If I am right in attributing the reduction of volume of international trade to the discrepancy in the prices of

farm products as compared with the prices of other things, then the closing up of this gap which has occurred recently (I know it has occurred because of the weather man, but it has occurred to a certain degree), will promote an increase in the volume of international trade, and that, in addition to what Mr. Lloyd said, makes me a little bit more hopeful than Mr. Cairns about increasing the consumption of wheat.

RAGHBIR SINGH BANS, *University of British Columbia, Canada.*

The discussion has so far dealt mainly with wheat, but I propose to deal with the sugar situation. The outlook for international trade is more or less influenced by government policies and especially by restrictionist and protectionist policies. From facts which have been collected about sugar, I am going to try to show the effect of different policies. Considering the fact that approximately fifty-five countries of the world are producing sugar, it is impossible for me to go into every detail of the subject. I will, therefore, confine myself to the effect of two different policies, namely, restriction and protection of the production of sugar. To illustrate, I have taken a definite period, from 1920 to 1934.

The fifty-five countries I have divided into seven groups. I have taken the main sugar-producing countries, such as India, Java, and Cuba, separately; the others are placed into groups according to their political affiliation, that is, the British Empire (Australia, South Africa, Mauritius, the West Indies) and the United States (Hawaii, Porto Rico, and the Philippines); in addition, European beet-sugar-producing countries are taken in one group, and some other less important countries (Brazil, Peru, San Domingo, Formosa, Mexico, Egypt, and Argentina) which are producing cane sugar come in yet another group. With regard to their policies all these countries fall into two divisions. On the one hand, countries such as Cuba, Java, and the European beet-sugar-producing sections (those which signed the Chadbourne Agreement) have adopted restriction of production policies for the past five years. On the other hand, India, the United States (including Hawaii, the Philippines, and Porto Rico), and the British Empire have changed to protectionist policies.

The first division consists of the members of the Chadbourne Agreement, which was signed on May 9, 1931. It originated in the capitalistic interest of the banking world and was a world-wide movement. In the last International Conference of Agricultural Economists it was referred to as a 'comprehensive scheme of world planning'. Omitting minute details because of limitation of time,

the agreement was composed of nine articles. The important article was that every member of the plan was given a quota for export which was valid for five years. The following were the quotas :

TABLE I. *Sugar Export Quotas under the Chadbourne Agreement*

(Cuba, long tons; others, metric tons)

Year	Cuba	Java	Czecho-slovakia	Germany	Poland	Hungary	Belgium	Total	Peru
1st	655,000	2,300,000	570,817	500,000	308,812	84,100	30,275	4,449,004	360,000
2nd	805,000	2,400,000	570,817	350,000	308,812	84,100	30,275	4,549,004	373,750
3rd	855,000	2,500,000	570,817	300,000	308,812	84,100	30,275	4,649,004	373,750
4th	855,000	2,600,000	570,817	300,000	308,812	84,100	30,275	4,749,004	373,750
5th	855,000	2,700,000	570,817	300,000	308,812	84,100	30,275	4,849,004	373,750

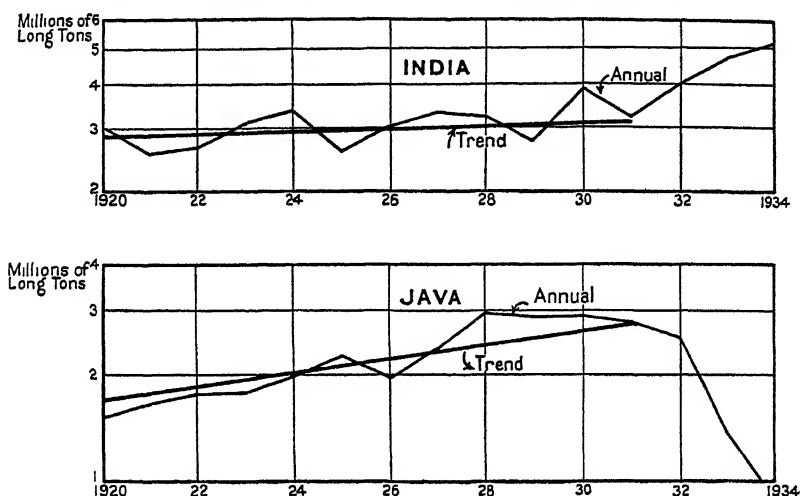
It also lays down the regulations for stocks and production, that are to limit the member countries. Under the plan the International Council was established and was authorized to regulate the allowed quotas. The quota was based on a sliding scale so that, if the world price rose to 2 cents, the quota would be increased 5 per cent., and further increases in quotas would be made if the price increased to 2.25 cents and 2.50 cents. The motives of the plan were to raise the price of sugar and to dispose of the surplus.

Now for the next few minutes my purpose is to compare the production trends of the countries which adopted the different policies. If we examine the graphs, we see quite clearly the results of different policies from their production trends. Furthermore, we shall discover how one country is affected by the change in the policy of another country.

Graph I shows the production trend in India and Java. There is a definite connexion between the two countries. The actual production of India fluctuates about the trend, and the trend up to 1931 shows a slightly upward direction. The trend for Java indicates more rapid increase up to 1931 than that for India. The steady demand for Javan sugar in the eastern market, namely, in India, China, and Turkey, and the Cuban restriction policy of 1926 helped Java to maintain the upward trend in production. In addition, there remained to be enjoyed by Javan sugar an extensive free market in the world, especially that provided by Great Britain. The position of both countries after 1931 was much more significant. In the two years after 1931, the production of India increased over 70 per cent. and at the same time its imports decreased 68 per cent. On the other hand, production in Java declined disastrously, that is, over 50 per cent. in one year. The reduction was rather more rapid

than the increase of India. An abnormal increase in the production of India is an evidence of her protectionist policy, and the reduction of production in Java is due to the policy adopted by the Indian Government, combined with the participation in the Chadbourne Plan.

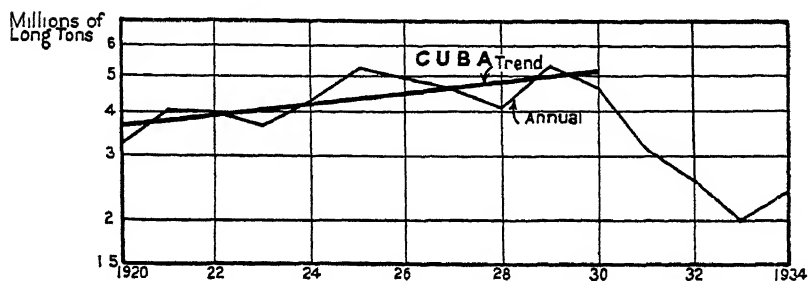
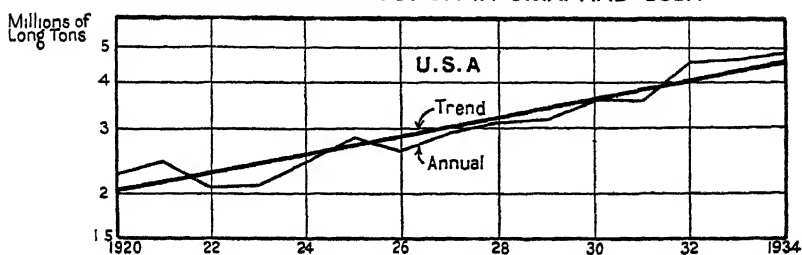
GRAPH I. SUGAR PRODUCTION IN INDIA AND JAVA



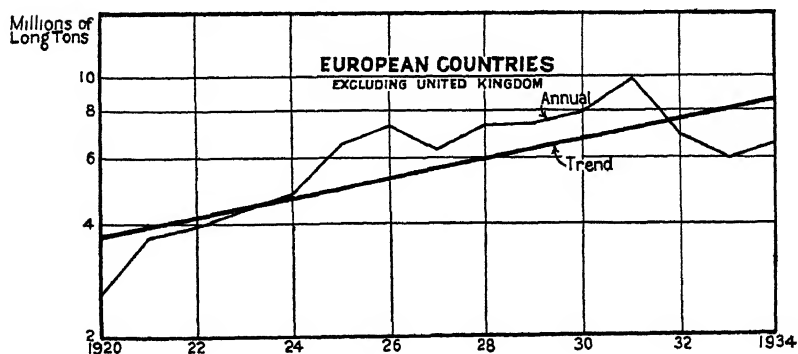
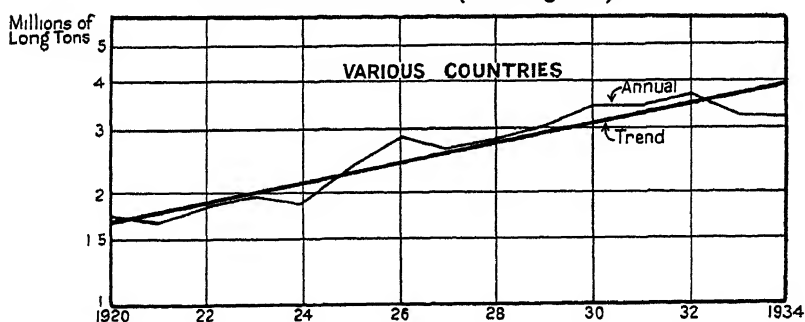
If we look at Graph II representing the production trend of Cuba and the United States, we find exactly the same relation as in the case of India and Java. The production on the whole up to 1929 was upward, and Cuba enjoyed the rapid expansion of consumption of sugar in the United States, combined with a reciprocity agreement, that is, 20 per cent. preference on the general duty. Up to 1929 half of the United States market was supplied from Cuba, but after 1930 we see an extraordinary fall in the import of Cuban sugar into the United States, that is, a fall from 52 per cent. to 28 per cent. of the total United States consumption.

Graph III gives us a picture of the European beet-sugar-producing countries. The recovery period started in 1921. At this time the production of sugar again advanced with State encouragement. The same protective measures, such as export bounty, subsidy, protective tariff, and the cartel system, as in the last part of the nineteenth century, were adopted by the various European governments. National feeling in each country was intensified very rapidly, and high tariff walls were erected around the industry. The policy of high protective tariffs adopted by the various countries was

GRAPH II. SUGAR PRODUCTION IN U.S.A. AND CUBA



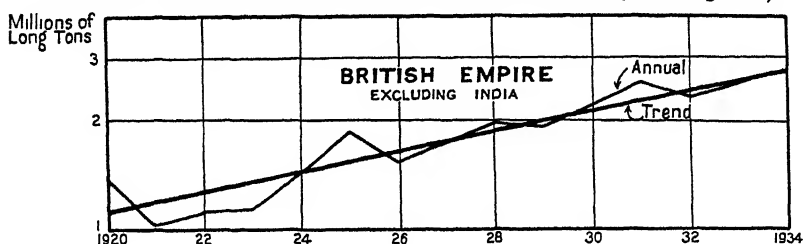
GRAPH III. SUGAR PRODUCTION IN 'VARIOUS COUNTRIES' AND EUROPEAN COUNTRIES (excluding U.K.)



directed against their competitors within Europe, and against the principal cane-sugar producing countries such as Java and Cuba, &c. In 1930 the tariff rates in Europe were increased to 75 and 100 per cent. of the wholesale sugar prices.

As we observe from Graph IV, no different position exists for the British Empire's sugar production. The upward trend is due to the development of the home beet-sugar industry with government aid and preference for the Empire sugar.

GRAPH IV. SUGAR PRODUCTION IN BRITISH EMPIRE (excluding India)



Let me come back now to the accomplishments of the Chadbourne Plan. The Plan was partly successful, that is, in controlling the production and in disposing of part of the surplus of the member countries, but it completely failed with regard to the rise in prices. Its failure was mainly due to its limited scope; that is, it covered only 40 per cent. of the world's production and encouraged the non-member countries to expand their production. This is well illustrated in the following table (Table II):

TABLE II. *Production of the Chadbourne Plan Countries in relation to Non-Member Countries.*¹

(Millions of long tons, raw value)

Year	World production	Chadbourne group	U.S.A. and dependencies	British Empire	Other countries
1929-30 .	27.3	12.5	3.5	4.6	6.7
1930-1 .	28.4	11.4	3.6	5.2	8.2
1931-2 .	26.2	8.8	4.0	5.8	7.6
1932-3 .	24.1	6.4	4.3	6.7	6.7
1933-4 .	25.1	6.1	5.0	7.4	6.6

The figures show that the production of the Chadbourne group fell from 12.5 million long tons to 6.1 million long tons. On the other hand production of non-member countries increased from 14.8 million long tons to 19 million long tons. Secondly, its failure

¹ *Report of United Kingdom Sugar Industry Enquiry Committee*, p. 14.

was due to the over-estimation of the consumption; for example, Cuba failed to dispose of the given quota in the United States market. This was due to the decrease of consumption and the increase of production in the United States. Similarly, Java lost her eastern market because of the development of sugar production in India.

From the previous discussion, I find evidence to warrant a statement that in sugar-producing countries such as India, the United States, the United Kingdom, and the other beet-sugar producing sections of Europe, where protectionist policies have been followed, the production of sugar has increased. On the other hand, in countries such as Java, Cuba, and the beet-producing sections which joined the Chadbourne Agreement, where no protectionist policies have been followed, the production of sugar decreased, this decline being hastened by the restrictive policy of the Chadbourne Agreement. In other words, at the present time conditions are such that countries which produce sugar cheaply are forced out of the world market, while countries producing at high cost insist on pursuing these protectionist policies indefinitely. The centre of gravity of sugar production under the pressure of two forces, restrictive and protectionist policies, has shifted. Consequently, international trade in sugar has declined.

I wish to close my discussion with a short remark on the future of sugar production. We can do no better for the control of production or for reasonable prices for sugar unless there is an international agreement between all exporting and importing countries, and each country is given an annual quota for production and export or import. The international agreement must have a wide scope. It must include producing and importing countries. The Chadbourne Plan emphasizes the need for the wide scope of any such agreement because non-member countries attempt to increase their production; and this would always happen. The international agreement must recognize the comparative advantages for sugar production of each country, that is, the favourable or unfavourable conditions of each country with regard to climate, soil, population, and transportation. It must provide complete and accurate statistics for each country. It must have government support and sufficient length of time.

A. CAIRNS, *in reply to the discussion.*

I think I need not comment on Dr. H. C. Taylor's remarks because I not only agree with what he said, but I recognize fully the validity of his distinction between the work of those people who are trying

to see ahead a generation or more and the work of those who are dealing with problems of more immediate concern.

I also find myself in complete agreement with Mr. L. Wheeler. There is no doubt that the outlook for international trade in the agricultural staples which he mentioned is much more hopeful than in the case of wheat. In fact I believe I prefaced my remarks by saying that I was conscious of being open to the charge of being unduly influenced by my close association with a particularly vulnerable commodity.

I shall not attempt to discuss the problem raised by Dr. de Arlandis from Spain. I must, however, admit that a good deal of travelling about Europe for seven years has convinced me of the truth of her contention that European countries are not going to decide the issue of whether they will grow their own wheat or import it from abroad on the basis of relative costs of production. The decision will be made on the basis of a broad complex of political and social issues. Even if it cost only 25 cents a bushel to grow wheat in Argentina and 250 cents a bushel to grow it in Spain and Portugal, the latter countries would decide to continue to produce at home most of their wheat requirements.

Mr. Lloyd asked me why the Wheat Advisory Committee had not been more successful in its attempts to reduce wheat acreage. He added that he was glad it had met with so little success, otherwise we should have had a serious world shortage of wheat. The Wheat Advisory Committee never recommended a drastic reduction of acreage. The aim of the 1933 Wheat Agreement was not acreage reduction as such, but a reduction of surplus wheat stocks in the hope of establishing more stable and more remunerative wheat prices. The 1933 Wheat Agreement did not refer to direct acreage reduction; the basic provision of the Agreement was strictly to limit the quantity of wheat any signatory country could export, and to leave that country entirely free to adopt whatever methods it chose to adjust its domestic production to home consumption, adequate reserves, and export quota requirements. It has always been recognized by the Wheat Advisory Committee that the direct reduction of the area sown to wheat was not at all practicable for many countries, and that many different measures would be required to cure the existing maladjustments in wheat production and distribution. The Wheat Advisory Committee has never put forward a plan which did not envisage each country being entirely free to select its own method (be it direct limitation of the area sown, cutting or pasturing wheat green, feeding either denatured or natural wheat to

live stock, or segregating reserve stocks) of trying to establish remunerative prices. The only hard and fast condition that has always been laid down as the focal point of any sound scheme is that no country should export more than her export quota.

Mr. Lloyd then asked if I would not like to see very much freer trade. Of course I would, but I do not think we shall see in the next few years extensive relaxation of wheat import control measures; if not, then we ought to formulate our production policies accordingly.

Mr. Lloyd asked me why I took such a gloomy view of the wheat situation. The darkness of my view is due to the fact that the wheat-exporting countries are planting an acreage which will soon result in their trying to squeeze eight eggs into a basket that holds only five—i.e. average yields on the present wheat acreage in exporting countries will provide annually about 800 million bushels of export wheat to supply an import demand of only 500 to 550 million bushels. He then wished to know if I favoured more or less planning. I think we shall get more planning whether we like it or not. I am in favour of more effective planning, but in the case of wheat I fear we shall not get it as long as we allow our hopes rather than an objective appraisal of the facts to influence our conduct.

Mr. Lloyd then stated that it might be necessary in the next few years to control and restrict profiteering by agricultural producers. Given the necessary restrictions against imports, it is easy to see how agricultural profiteering in deficit countries might arise, but I am not in the least alarmed about profiteering by farmers in agricultural surplus countries. His next point was that he thought the Wheat Advisory Committee should give some attention to the need for adequate wheat reserves. I fully agree, but I would like to point out that the only reward overseas wheat producers have so far received for maintaining adequate wheat reserves in the past five years has been a catastrophic lowering of their standard of living. Leaving aside the very important question of the extent to which uneconomic wheat prices have undermined many British overseas investments, to Great Britain adequate wheat reserves have in practice meant dirt-cheap wheat and the release of a lot of extra purchasing power to spend on housing and other activities which have contributed so much to the economic recovery of this country. To Argentine, Australian, and Canadian wheat growers adequate wheat reserves have in practice meant starvation prices. If importing countries desire adequate wheat reserves as an insurance policy against shortage of supply and high prices, surely they ought to pay at least the storage and interest outlay necessary to carry such

reserves, instead of using them as a club to beat the price of wheat down to 50 cents per bushel! In 1932 many Canadian farmers received less than 25 cents per bushel for the No. 1 wheat they delivered to their country stations. In the same year the price of oats and barley was so low that it scarcely paid to haul them from the farm to market. To-day there are no reserves of feed grains on many prairie farms, and as a consequence of the drought tens of thousands of cattle are being hauled to feeding places tens of hundreds of miles away. It is impossible to attempt to justify such a state of misery, and it is waste of time attempting to deny that the existing economic organization which permits such colossal waste is sadly in need of reformation. I hope that a rational solution of the problem of maintaining adequate farm reserves of grain will be evolved from Secretary Wallace's ever-normal-granary and crop insurance plan. I see no reason why such a scheme could not be put into operation in each of the overseas wheat-exporting countries. If such a system were adopted it would be a great boon to producers and consumers alike.

Finally, Mr. Lloyd said that what we wanted was more and not less wheat; we wanted more wheat not only because we wanted greatly to increase human consumption, but because we wanted to feed a lot of wheat to animals and thereby increase the output of dairy, meat, and hog products. He should have added that what he really wanted was extremely cheap wheat! To propose the growing of more wheat in order to augment the supply of animal products presupposes the continuation of uneconomic wheat prices. So long as the supply of wheat is so great that a large part of it is fed to live stock, and no attempt is made to differentiate between the price paid for what is consumed by human beings and the price paid for what is fed to animals, just so long will it be hopeless to expect overseas wheat farmers to attain a reasonable standard of living.

Dr. García Arias asked for my opinion of the possibilities of working out a solution of the world wheat problem which would give due recognition to the fact that some countries have expanded their wheat acreage much less than others. The point he has raised is an extraordinarily difficult one. Take for example the Danubian countries. Although their costs of production are much higher than in overseas countries, they feel that, because they have few attractive alternatives to wheat growing and because they were first in the business of exporting wheat, a scheme should be worked out which would not only enable them to get remunerative prices for their wheat exports, but which would also enable them to maintain their

pre-War volume of production. The overseas countries counter this argument by pointing out that they too have no attractive alternatives to wheat growing, and that Argentine, Australian, and Canadian farmers see no reason since overseas costs of production are lower than in the Danube Basin, why the full brunt of the needed readjustment should fall on them. The same sort of arguments and counter arguments can be heard between the various overseas countries. The Argentine has increased, since pre-war days, her acreage very much less than have Canada and Australia. Argentine wheat farmers therefore feel that they should be called upon to make a very much smaller cut in wheat acreage than their competitors in the Dominions. Canadian wheat farmers point out in reply: (1) that they colonized large new areas during the War; (2) that because of climatic conditions they must grow wheat or give up farming; (3) that in addition to wheat Argentine farmers can grow maize, linseed, alfalfa, and meat; and that Argentine and not Canadian farmers should reduce their wheat acreage. And so the argument swings back and forward.

Many plausible reasons can be given to support an argument that this or that country should or should not reduce wheat production. It is so difficult to reach a compromise that I fear the situation will be allowed to drift until we get back into a position similar to the one which existed in 1932. One large or two normal crops in the overseas countries will produce such a situation. We shall then have very large stocks, great pressure to export, decreasing prices, increasing government subsidies, and a general chaotic situation similar to that which existed in the shipping industry a few years ago. Naturally I would very much like to see agricultural interests taking advantage of the present respite to work out a plan which would bring to the wheat industry the same sort of assistance as has recently been rendered by international co-operation to the steel, shipping, tin, rubber, cement, and coke industries. It took a long period of price-cutting and other forms of ruthless competition to bring these industries to their senses, and to enable them to see the wisdom of sharing the available markets in order to get better prices. Although I am extremely pessimistic about the wheat outlook for the next few years, I cannot believe that the overseas wheat-exporting countries will indefinitely continue to compete for the privilege of subsidizing wheat consumers in importing countries. It is certainly not in the interests of their wheat producers to do so, and sooner or later they will wake up to this fact. Unfortunately, several countries now appear to be more interested in the volume of wheat they

export than in the amount of purchasing power they get for it. But surely that sort of folly cannot go on for ever! I think it will cease when these countries realize that others can play the same game, and that price-cutting leads only to further price-cutting by others and not to increased business.

I am quite unable to agree with Professor Lattimer's interpretation of wheat statistics. I am afraid he has compared the 1935 acreage figures with the peak years and has failed to appreciate that the enormous reduction of wheat acreage last year in the Argentine was an accident caused by severe drought and that the loss was made good this year. Professor Lattimer stated that I should consider the world as a whole and not over-emphasize the failure of crops in one or two countries. I was speaking of the world and not of a few countries when I stated that had unit yields on the area actually sown in the past four years been equal to the unit yields of the ten previous years, then world wheat stocks in August 1937 should now be forecast at about 2,000 million instead of at about 625 million bushels. The essential figure to bear in mind is that the present wheat acreage in exporting countries will, given normal atmospheric conditions, produce roughly 300 million bushels per year more than the probable demand for imported wheat.

Professor Lattimer then stated that a Royal Commission had recently concluded that higher prices for exports of dairy products were imperative if New Zealand's overseas debts were to be paid. He went on to say that Canada was in very much the same position and that if they did not get higher prices they too might be unable to meet their overseas indebtedness. His final note was that if Europe does not buy Canadian goods and pay better prices for them she will have to whistle for the money she has invested in Canada. I entirely agree with him about the need for higher prices in both New Zealand and Canada, but, unless he means that costs of production will be lowered by the repudiation of indebtedness, I cannot see how the need for higher wheat prices can be used as an argument in support of his contention that my picture of the wheat outlook is too black.

Why are the provincial governments, cities, and municipalities in the prairie provinces of Canada now on the verge of bankruptcy? Why did the social credit movement sweep Alberta? Why is there now a great deal of unrest on Canadian wheat farms? Why is a drastic reduction of interest rates and a drastic writing-down of farm indebtedness so widely discussed in western Canada to-day? The answer to these questions is the drought and the fact that Canada

has not enjoyed economic wheat prices since 1929! Yet wheat prices are now supported by: (1) four consecutive extremely short crops in the United States and Canada; (2) the virtual failure of the 1935-6 Argentine crop; (3) two years of substantial imports by the United States; (4) the poor 1936 crop in southern Europe; and (5) by the absence of exports this year from Russia. If it takes such an array of bullish factors to produce dollar wheat, what price will wheat be when several of these factors have been reversed?

In this connexion I think it very important to bear in mind that there is a price in each of the overseas exporting countries below which the government cannot let wheat fall. When this point is reached the governments are compelled by political considerations to adopt price-supporting measures of one kind or another. In the past the measures adopted by each country have not been co-ordinated in an international plan. There is a very real danger that next year or the year after we shall see all the overseas countries trying to solve their wheat problems by adopting the tactics of certain European 'importing' countries—i.e. using export subsidies to push their wheat troubles outside their boundaries. If such a situation is allowed to develop it will produce conditions so chaotic that we may get repercussions far more widespread and affecting many more commodities than one would be justified in anticipating from a study of the relationship of wheat to other commodities to-day. I have recently been told by several Canadian friends that the great increase in the world production of gold will soon bring about a sharp upward trend in the general price level, and that the strength of prices in general will carry wheat prices up to a remunerative level. I could agree with this reasoning if the present statistical position of wheat was due to an adjustment of supply to demand caused by low prices squeezing out of cultivation excess acreage. But we know that the present rather tight statistical position of wheat is solely the result of highly abnormal atmospheric conditions and that there is every reason to anticipate a complete change in the statistical picture in 1937-8. In view of this fact I cannot see why increased gold production will keep wheat prices from falling in the next few years any more than it has kept sugar prices from falling in the last few years.

FARM ORGANIZATION WITH SPECIAL REFERENCE TO THE NEEDS OF TECHNICAL, INDUSTRIAL, AND ECONOMIC DEVELOPMENT OF AGRICULTURE

FIRST OPENING PAPER

A. BRIDGES

Agricultural Economics Research Institute, Oxford

THE subject implied in the main title of to-day's proceedings is one which opens up a vast field for discussion. I would like to make it clear at the outset that I have read into the title a distinction between the organization of farming and the organization of the farm. The latter is properly concerned with the problems connected with the organization of any individual farm to the best advantage of the farm. The former, which I understand to be the subject for to-day, has a much wider implication, namely the organization, not of a single farm, but of the industry as a whole. Also by the term 'organization' is meant the structure of the industry, how it is built up in its units of land, labour, and capital, and the principles on which these factors of production are regulated.

In our agricultural literature we are apt to associate particular types of farm organization with certain countries. Thus we associate the peasant organization of farming with Denmark and Switzerland. We think of farm organization in North America partly in terms of family farms and partly, in former times, with what were called 'bonanza' farms. At present we associate Russia with large-scale State farming. With conceptions of these kinds in our minds we might be inclined to think of to-day's subject as a conflict of nations, each defending the farm organization associated with it, but, while this may be difficult to avoid, we should be in error if this aspect is taken too literally. In most countries all the main types of farm organization exist in a greater or less degree. In this country, for example, there is the hereditary peasant system, part-time farming and family farming; there are medium-sized farms employing some wage-earners and large farms employing a considerable number of workers; there is also a little corporative farming, and, while State farming does not exist in a large sense, some farming is carried on by public and semi-public bodies. My assumption is that, in different degrees, this position is true of many other countries besides this country, and, if this is so, the problem of farm organization is not

one on which we are in opposition, but one which, in principle, we all have in common, namely the economic strength and weakness of all the various ways in which the industry is organized.

One thing which is impressive is that, in nearly all the developed countries, farms are generally small. If we accept our own official statistics on this point, then nearly 70 per cent. of all *farms* over one acre in Great Britain are under 50 acres. In most European countries the proportion of such farms is higher than that. Even in this country, which is not regarded as a country of small farms, the figure is impressive on behalf of small-scale farming. It is a figure also which appears to make farming on a large scale seem negligible. But the corrective can be applied by the statistics which show that some 70 per cent. of the *land* of Great Britain is farmed in farms larger than 50 acres. Thus 70 per cent. of the farmers farm only 30 per cent. of the land. This reverse side of the picture would not be the same for other European countries, but it is bound to be true that the land under the control of small farmers is a much smaller proportion to the total agricultural area than their numbers are to the total numbers of farms.

I recognize that the point of 50 acres which we take in this country as the dividing line between small and large holdings is an arbitrary one, and that in many European countries a holding of 50 acres would be considered a large farm, while in the newer overseas countries 100 acres would rank as being about the dividing line. Taking only this country then, it may be said that in point of numbers the small farms, i.e. under 50 acres, are the most important, but from the point of view of the agricultural area involved they are considerably less important. In fact it is interesting to note that all the land in holdings under 50 acres is not as great as the land in holdings over 300 acres, the largest group recorded in the statistics, which in point of numbers of farmers only accounts for 3 per cent. of the total.

When we consider the various issues which are raised regarding size of farms, it seems to me that a useful analysis might be made between those factors which cause farms to be small and those which arise because farms are small. The failure to make this distinction leads to a good deal of confusion. For example, one of the most complex issues in the discussion is concerned with the intensity of production. It is said that small farms are suitable for the production of intensive crops, whereas what is really meant is that because farms are small the energies of the farmers must be directed to the production of intensive crops. If we were clear about the causes and

results of small holdings we would not therefore find ourselves in the untenable position of claiming that small farms were any more suitable for intensive production than large farms.

There are other distinctions to be made on this subject. For example, in the first group of factors, which cause farms to be small, there is the distinction between those which are inherent in the nature of farming and those which are survivals of bygone days or are the result of haphazard development, and which could be removed if the necessary effort were made. In the second group, which arise because farms are small, there is the problem of effecting a compromise by trying to overcome the difficulties while retaining the small-scale farming system. In this connexion we find co-operative societies for the marketing of small outputs, a problem which would certainly be simpler if there were no small outputs. We also have co-operative use of machinery or engineering developments for making small, cheap, general-purpose machinery, problems which would not arise if there were no small farms.

When we think about farm organization it is common to make certain distinctions along the lines of size of farm or the size of business, both of which are necessary measures for certain purposes, but are not really the fundamental characteristics which differentiate types of farm organization. Peasant farms are generally small in area and size of business, and we think of them as such, but it is the fact that the organization has special characteristics of an economic and social kind, which distinguish peasant farms from other kinds of farm organization. In the same way family farms are similar to peasant farms in terms of size, but we also think of them as having features which shade them off from the organization of the peasant farms. With corporation farms and State farms it is natural to assume that they are always large farms, or highly specialized farms, but there is no particular reason why they should be so because they are operated by corporations or States. The basic differentiation in regard to their organization is that they are run by a corporation or the State as the case may be, and have special characteristics in the provision of land, labour, and capital.

It is important to emphasize this difference between size and method of organization. The basis of the peasant and family type is that the land and capital are owned by one man, who is also manager and employs little or no labour. Yet it is well to recognize that this would mean a large farm if the peasant owned sufficient capital and if his family and relatives were numerous enough. This is an exceptional case, which perhaps involves a difference in standard of living

and outlook from that of the traditional peasant, but there is no essential difference in the organization of the three factors of land, labour, and capital. Similarly, when dealing with corporation or State farming it is true that the farms are usually large, but the organization could be used for a small area or in small-scale farming, and there may, in fact, be instances where it is. Emphasis on this difference is very important, because in the past there has been a long conflicting controversy about size of farms in which the technical efficiency of various sizes has been the main issue. It is true that it is one problem connected with farm organization, but there seems to me to be the more important one of the type of organization of land, labour, and capital.

I will deal briefly with the question of technical efficiency of various sizes of farms, using that term in the sense of producing goods at a low cost while paying normal return on capital and labour. It is generally considered in this country, at least, that there are many farms which do not permit of a full modern standard of efficiency. They are the small farms which involve a high capital charge for permanent equipment, e.g. buildings, roads, fences, and the like, and limit or prevent the use of many kinds of modern implements and machines. Also by having small fields they require more time for cultivating and harvesting on each unit of land, and by having a variety of live-stock enterprises each on a small scale more time is required per head, while the farmer becomes a 'Jack of all trades and master of none'. In the general accusation of the uneconomic conditions of production on small farms there is also the fact that farmers must buy their requisites in small quantities, and their output of each product is very small. These conditions make for high costs in buying and low prices in selling. This weak trading position has in some countries been overcome by the formation of co-operative societies, yet the cost of the service they provide still remains an additional expense which must be met by the farmers.

In the comparison of small and large farms certain contentions are usually made which suggest that the disadvantages of small-scale production are overcome by other factors. I mention two which seem important. Firstly, as to small farms, it is claimed that they give the opportunity of close personal management by the farmer, which is all the more effective because he owns the land and his savings are at stake. Since the most of the small farmer's time is taken up in labour and not in management, the latter being negligible in his case, the claim means that when the work is done by the farmer himself it is better done than if performed by an employee, or that the larger

farmer and his men are less skilled and less reliable than the small farmer. I think it may be difficult to support this contention, for, apart from the fact of the possibilities of employed workers being more specialized on the larger farms, there are numbers of examples where farm workers are known to be first class men and where their pride of craftsmanship is as strong and sometimes stronger than that of the farmer himself. Further, the increased attention which can be given to management on large farms may counterbalance the lack of it on small farms. Even though we admit the validity of the contention, we have still to be sure that the extent of the advantage arising from the close personal contact and financial motives on small farms is equal to, or greater than, that which large farms possess by virtue of the large-scale operations.

Secondly, there is the other main point connected with the small farm, namely, that it results in a large output per acre of land. Most of the figures show, though this is not universally so, that the small farms obtain a higher output per acre. This arises from the concentration of their energies on intensive crops, or by carrying a greater head of live stock than the large farms, and it may be, though this is less clearly established, that the yields per acre of the individual crops or the yields, say, of milk per cow are also larger.

It does not follow, however, that the larger farms could not shift the character of the crops grown, increase the stock, or force a greater output per unit, if it were necessary and the means were available to do so. Small farms do not appear to be better placed for producing a high output because they are small farms, and it seems that the necessity of having to earn a livelihood is the main reason for the phenomenon of their greater output per acre.

If it is admitted that larger farms have advantages in technical efficiency, the main issue is how far it is necessary to go before the optimum size is reached. The answer is not easy, as the size will vary with the types of production for which the land in any area is suitable. But if we think of the factors involved—that is, of specialized labour, of the full use of modern machinery for cultivating the land and harvesting the crops or in live stock production, of flocks and herds sufficiently large to pursue an adequate policy of live-stock improvement, and of adequate output to secure economy in buying and selling—and calculate the area which is necessary to meet all these demands, even on a widely diversified system of farming, we should find that we were far short of the tens of thousands of acres and extremes of that kind, which are often spoken of as the unit of large-scale farming.

The extension of farming organization beyond the moderate sizes of 1,000 to 2,000 acres at once introduces problems of another kind, and in this connexion I might mention that of management. The moderate size of holding enables close supervision to be made of all the day-to-day operations on the farm. When, however, farms are made much larger, then we are faced either with extending the services of management in order to preserve this close supervision, or alternatively with sacrificing its efficiency. If the former is followed we have not gained anything. On the contrary the relationships and checks which are necessary between sub-managers and the manager create a new set of overheads, which do not occur in the moderate-sized unit.

On grounds of technical efficiency we see on the one hand the great disadvantages of the small farm, and on the other the dangers of a different kind which may arise with the very large farm in an industry like agriculture. Stress is usually laid on the personal factor as the corner stone of farm organization for the purpose of securing efficiency in production. Opinions may differ on this question, but I think too great an emphasis is given to its advantages and not sufficient to the conditions of production which may arise where the personal factor is combined with small-scale organization. At the same time we have to recognize that, to accomplish an increase in the size of holdings necessary to give scope for modern ideas of production, it would involve a revolution in organization of farming. In England and Wales, for example, if we take only 500 acres as a size to secure efficiency in production, the number of holdings would have to be reduced from 384,000 to some 50,000.

I turn now to those questions of the structure of the organization of farming, which seem to me to override questions of technical efficiency, but which, nevertheless, are to some extent also linked up with them. As I indicated earlier, the real distinguishing feature of farm organization is not the size of the farm, or of the business, but the way in which it is organized for the use of land, labour, and capital. The peasant farm means a sub-division of the ownership of land; it requires no paid labour, and the capital is provided out of the savings of the farmer and is controlled by him. The corporation or State farm, taking the other extreme, is distinguished from the peasant farm by the nature of the supply of its capital and its dependency on paid labour and salaried management. Between these extremes we get types of organization in which there is a shift in emphasis on some, though not all, of the factors of production. Thus the problems with which we are concerned are how the land is to be

controlled and divided, how the capital is to be owned and controlled, and of the place of management and of the type and organization of labour in farming.

I do not propose to deal with the question of land and its tenure, as this subject has already been discussed at length during the proceedings on Land Tenure. But I realize its fundamental importance in the subject, since the majority of the prevailing systems of farm organization owe their existence, in some measure, to political and social ideals concerning the ownership of land and the place of agriculture in national life, which in turn have tended to create and to preserve a certain amount of rigidity in sizes of farms and in the supply of capital and labour in the industry.

The first topic which I will discuss is that of capital. With a few exceptions the industry is capitalized on an individual basis, that is to say, the farmer provides and controls the capital used on his farm. Also, this capital arises almost entirely from the savings made in the industry. There are not many primary industries in which the capital and control is through the individual, and even in the distributive trades the proportion of the capital provided in this way is nothing like so high as in agriculture.

The provision of capital by the individual and the limited scope which exists for its accumulation create to some extent the wide diversity of size of farms and businesses found in the industry, since the amount of capital at one person's disposal will determine the size of farm which he can operate, or the type of farming which he can pursue. It is common knowledge to those who work in the field of farm management that the amount of capital which is employed by individuals on farms of similar size and character varies widely. These variations arise from the degrees of intensity with which the land is stocked and cropped, which in turn appear to be due to the personal character of the provision of capital.

When we remember that the industry relies for its capital on the personal savings made by the individuals engaged in it, we find that these variations arise from certain circumstances which affect the accumulation of capital: (1) the varying ability of the farmer, (2) the standard of living, (3) the effect of testamentary disposition on the death of the farmer.

I need not dwell on the first of these points. In every industry there are certain to be variations in the ability of those responsible for its direction, which will affect the financial results obtained in it. When, however, we think of the great number of farmers and the lack in many cases of sufficient financial resources to obtain a good

education and adequate technical training, we are bound to confess that the standard of managerial ability may not be so high as in other industries which are capitalized in a different way.

As regards the second point, agriculture is peculiar in the sense that it is comparatively easy to adopt a standard of living which makes few calls on cash requirements, the farmer and his family getting most of their necessities from within the farm itself. It is for this reason that it is possible to start farming with a moderate amount of capital, and, by pursuing extensive methods at the beginning, to build up capital and eventually to take more land or to carry on a more intensive kind of farming.

The third point about the method of individual provision of capital is that on a farmer's death the capital may be dispersed by division among members of the family, while part of it will accrue to the State in death duties. The effect of this is that such members of the family who are trained to follow an agricultural calling may have to go through the same process of starting in a small way and building up.

The point which I wish to emphasize in regard to these features is that farming is not an industry which is capitalized on the basis of what it requires, but on the capital ability of the individual at any given moment. It may be that, in this way, farming is kept efficient as far as its managerial personnel is concerned, but the periodic setbacks in capitalization, which occur because of the personal character of its supply, keeps farm organization and development essentially conservative in outlook and may also affect its profitability.

Contrast this method of capitalization with the joint-stock principle. Here an enterprise is floated with the capital necessary for running it, and fresh capital for its development may be raised when occasion demands. It does not suffer break-up on the death of any of its share-holders or lose through the payment of death duties. For these reasons the capital structure can be maintained. Further, the joint-stock principle enables an industry to get any temporary credit it requires through the normal banking channels, based on its earning capacity. At present agriculture offers few real standards by which to gauge the earning capacity of individual farmers. It has been necessary in some countries to set up special credit institutions to overcome some of the difficulties associated with small-scale farming. In countries like this, however, while a small proportion of farmers may receive short-time credit through existing credit institutions, the majority have to fall back on the more costly and less desirable form of merchant credit.

Two further points in regard to capital may be emphasized. Firstly, if the industry is made up of units which make it difficult for farmers to get any more than a bare living, or if it is manned by individuals whose motives are other than economic, that part of the industry must remain in a more or less static condition. This may account for the survival of much small-scale farming. Secondly, farming has established for itself a reputation as an industry which does not yield profits as high as those earned elsewhere, and for being one in which it is only possible to be reasonably successful if one is born and bred to it. On this account competition for farms becomes restricted to those brought up in the industry. This view has generally prevailed, and agriculture has therefore become something in the nature of a closed profession. This in all probability has deterred the entry of capital to the industry on a joint-stock plan.

It must be admitted, however, that this form of organization has not been outstandingly successful in agriculture, but the difficulties of getting access to land have prejudiced the chances of success. It is clear that if the joint-stock principle is to take a more active part in farming organization, access to compact areas of land is necessary for economy in equipment, in production, and in marketing, as well as being essential for supervision and administration.

The absence of that satisfactory management which is of fundamental importance in the joint-stock plan may also have been prejudicial to success. The employment of paid management has never been large in agriculture for reasons which are obvious. On some large farms the control of the day-to-day operations may be left in the hands of a foreman, the general policy of the farm, however, remaining with the farmer. On certain kinds of farm the latter function may be exercised by a bailiff, but generally speaking there is no managerial class having the high technical qualifications or business training of those in industry. Even in cases where there is a considerable capital at stake it is common to employ a farmer, or person of the bailiff class, as manager. In so doing the owners may put into his hands an amount of capital much in excess of that which he has been accustomed to handle, while the kind of organization envisaged by the owners, or necessary because of the division of the ownership of capital from that of management, is not one of which he has had any experience. There has been little or no call for the type of manager with organizing ability and business knowledge, but this aspect is one which any change to the joint-stock plan would certainly have to face. At the same time, as I have previously indicated, the area which could be managed successfully may not be extremely large and, therefore, it

might be unnecessary to offer very large reward for management. But the point which I wish to leave with you is that the unit of management need not be the unit for capital purposes. This fact opens up opportunities for a new kind of management in the industry and provides possibilities for economy in the use of capital, which cannot be obtained in the present structure.

The third and last aspect of farm organization with which I will deal is that of labour. We get in agriculture a great many forms of labour organization. We can compare the small peasant farm or the family farm where the work is wholly done by the farmer, his wife, and his children with the larger business where paid workers accomplish the whole of the work of the farm. The comparison leads us to a number of economic and social issues. On the small general farm the peasant or family farmer has a great variety of jobs to perform. He is a general man, tender of all kinds of stock, cultivator of the soil, and harvester of the crops. In this way he gets experience, valuable in giving variety to his occupation and making for adaptability. But while recognizing this, it says little for the skill and craftsmanship required in agriculture, if he can do all these jobs efficiently. It is this aspect of the labour question which makes part of the case for specialization of farming. This point of standards of efficiency is not, however, the one I wish to stress. In the peasant or family organization there are undoubted weaknesses in technical efficiency when judged by modern standards, and to overcome them the holder must either work very long hours and use the labour of his wife and children, or alternatively sacrifice some portion of his or their labour worth. He and his family are known to work very long hours, and it is claimed that there are times when they are prepared to carry on for a poor labour reward. The implications of this are seen in contrast with the obligations of the farm organization employing paid labour. In this organization the number of hours and rates of remuneration are set for the farmer under statute. In this country the wage is based on providing a reasonable standard of living for the worker, who naturally tends to compare his hours and wages not with those of the small farmer, but with those prevailing in an entirely different set of circumstances, namely, with those of workers in other industries.

The better standard of wages and hours of work elsewhere tend to make more enterprising and efficient workers leave agriculture, while the setting of standards of hours and remuneration, which are not observed elsewhere in the industry, may result in a sacrifice of paid workers in times of stress and, what is also important, in some

sacrifice of the efficiency standards in farming, as well as in some change in the character of farming itself. The peasant and family farmer maintain their independence and, as far as possible, endeavour to preserve their capital. They can, however, adapt their hours of labour or sacrifice their labour remuneration and standard of living if necessary. It is true that the two forms of organization exist together in the farming structure, but the presence of the peasant type seems to be incompatible with a high reward for capital and labour in that part of the industry where capital and paid labour are relatively important.

One further point may be noted. While agriculture is naturally different from other industries in regard to its hours of work, the claims of farm workers, apart from the question of wages, are for shorter working hours, freedom from some of the Sunday work, and opportunities for holidays, so that their conditions may correspond more closely to those of town workers. It is difficult to see how these demands can be met when a great many of the farms employ only one or at most two men. Under these conditions there appears to be little possibility of paid workers getting freedom of any kind from the daily toil. On larger capitalist farms where more workers are employed greater flexibility in hours of work and conditions of employment is possible, and the requirements of workers may, therefore, be obtained by an extension of this form of organization.

It is clear, of course, that all the difficulties connected with paid labour can be abolished by adopting the peasant type of organization for all farms, but we must realize that by doing so we commit the industry to conditions of work which permit of little alteration and which are bound to become increasingly at variance with those in other walks of life.

I conclude by raising the issue which seems to emerge from all the questions which I have touched upon. It is this. Is agriculture to be organized on the basis which makes for the highest efficiency in the use of land, labour, and capital? If so, then we must ask ourselves is it so organized at present; if not, is it to be achieved by the further sub-division of farms and the settling of more people on the land, regardless of whether there is need for them there, regardless of their standards of living, and regardless of the interests of the consumers of food; or is to be achieved through medium- or large-scale organization by means of joint-stock or similar forms of capitalization, and an economy corresponding to that prevailing in modern industry?

There is no denying that agriculture in most civilized countries

has made great progress in technique in recent years. In crops, better seeds and more and better fertilizers have been used, and better methods of cultivation are being practised. In the breeding, feeding, and management of stock, there is a record of continual improvement. Concurrently with these improvements power machinery has been introduced where it has been economical to do so. These increases in technical efficiency should have led to more economical production, and few will deny that much of the agriculture to-day is reasonably efficient within the limitations of its present organization.

When, however, we consider the structure of the organization, can we say that any progress has been made? Is it not true, because of the too great division of holdings, by the method of individual capital and control, and by the difficulties associated with labour organization, that the capital costs and maintenance of the permanent and temporary equipment in agriculture are too high, that man-power is wasted, that the primary marketing of farm products is too costly, and that the industry generally is not as efficient as it might be?

While it may be claimed that there is some scope for further improvement in the art of farming, is it not the type of organization which bars the way to advances which would result in appreciable reduction in the cost of production? It may be then that the next big step forward would be to remove these limitations of structure with which the industry is hedged round.

Finally, we must ask ourselves too: If agriculture were organized on a joint-stock basis with larger units, would this be inconsistent with those national requirements of health and defence which are always considered so important in discussions of agricultural policy? It may be that this method of organization would mean fewer people on the land, but it does not necessarily involve lower production from it. It may, in fact, increase production since greater profitability in the industry would attract more capital and this in turn might mean a greater intensity of farming, and perhaps, in the long run, a rise in the use of man-power.

In many countries the industry is obtaining subsidies and preferential treatment, and most of the money necessary for this purpose has to be met by the taxpayer or consumer of food. If these props are to continue the taxpayer and consumer are bound to ask, sooner or later: Is the industry organized for efficient production?

FARM ORGANIZATION WITH SPECIAL REFERENCE TO THE NEEDS OF TECHNICAL, INDUSTRIAL, AND ECONOMIC DEVELOPMENT OF AGRICULTURE

SECOND OPENING PAPER

H. ZÖRNER

University of Berlin, Germany

IN this paper I wish to deal with the more important systems of labour organization in agriculture. Particular attention will be given to two systems: to that of the family farm and to that of the large farm operating with hired labour. Finally, I will enter into the forms of tenure: State ownership, rented farms, and owner-operated farms, the latter including individual ownership and collective ownership.

The characteristics of the family farm lie in the fact that the main labour requirements are met by the owner and his family. The owner and his family regularly take part in manual labour. Their efforts are supplemented only to an insignificant extent by hired labour. As large farms I would define those on which the attention of the operator is entirely directed to management and his capacity for manual labour is not utilized. All labour is done by hired workers. Between the two extremes, the type of family farm and the large farm as defined, all transitional stages are to be found. But I wish to emphasize these two types as representing two opposite poles. I intend to review the problems on the following lines:

1. According to the standards of farm management, i.e. the efficiency of family farms and large farms in questions of agricultural technique and organization.
 2. According to their importance from the standpoint of national economics, i.e. in the food-producing capacity and as consumers of industrial commodities.
 3. According to their sociological importance for the maintenance of the people.
1. What are the advantages and disadvantages of the two systems under varying physical and economic conditions of production?

Let us start with the family farm and see what advantages or disadvantages it presents in comparison to the large farm. I will omit purely live-stock farms without any arable land. Let us take

single-crop arable farms and presume absolutely no technical development. The organization in large units will offer no essential advantages against family farms, except that the large farms may rely on better trained personnel than the family farms. Turn, however, to a condition of highly advanced technical development. We realize best the differences that then arise between family farm and large farm, by comparing two extreme examples, for instance, the wheat farm as a family enterprise in Canada or U.S.A., and the great mechanized wheat farms of Russia. If the individual family farm can be provided with enough land to make full use of all technical equipment, such as tractors and combine-harvesters with all accessories, a further increase in size towards the large farm offers in this respect no enhanced advantages. Perhaps in the large farm machinery of greater dimensions working more economically can be used, but in this respect we soon come to a limit at which further enlargement of the plant ceases to be economic, and where only the use of several plants side by side distinguishes the large farm from the family farm.

Under such conditions, the scope of mechanization is not materially wider on the large farm than on family farms, but it can well be claimed that, thanks to the great number of machines, the large farm is in a position to run repair workshops of its own, and can derive certain advantages through being able to keep its own stock of spare parts. In marketing, the large farm may also be superior to the family farm, because of its ability to market in great quantities. It can also claim certain advantages in storage, when needed, by being able to put up the necessary buildings, silos, &c., on a large scale. But against these advantages of the large farm, a number of disadvantages are to be pointed out. Every expansion of the unit, every accumulation of machinery and utilization of large labour forces is accompanied by new problems of organization, hampers supervision, and often retards the utilization of the means of production at the optimal moment. Since in agricultural practices so strictly tied to certain dates (e.g. the right moment for ploughing, for harvesting, &c.) all delay may lead to material losses, disadvantages of this kind can counterbalance very substantial advantages of the larger unit. Furthermore, the family unit is a more elastic labour system than hired labour. This is particularly significant in farming because of the sharp alterations of peaks of labour requirements and quiet times. Even by a well-developed system of piece-work wages, the farm with hired labour can only partially attain such elasticity, and to a lessening extent the greater the number of workers. The greater

the share of family work or, at least, the closer the personal touch between the farmer and the workers, the easier it is to attain a certain elasticity of the labour system.

If the size of the large-scale unit oversteps certain limits, the transport problems within the farm lead to increasing difficulties. The development of the giant units in Russia, although they attempted to overcome these difficulties by mobilizing flying squads of workers, very clearly showed the disadvantages and dangers that lie in choosing too large a unit. The catastrophic experiences of the first years quickly led to a reduction of the size of the unit in that country.

If, therefore, in single-crop farming, the family farm can be supplied with land of sufficient area to allow of full utilization of technical equipment, it will very well be able to compete with the large-scale farm, unless technical advance provides large machines which are so superior to the smaller models that the use of the largest machines is very considerably more advantageous than the use of smaller plants.

What is the aspect of the problem if we think, not of single-cropping, but of diversified soil utilization? Consider this system, first without live-stock.

The tendency towards diversified arable farming commences as soon as the ratio of population to the available soil increases, thus necessitating a higher utilization of the land. Diversified arable farming, particularly the inclusion of root crops, checks the wholesale mechanization of all field work; and, where mechanization is attempted, the simpler types of machinery no longer suffice, and here also diversity is required. As of necessity more intensive soil utilization by means of a variety of crops reduces the acreage that can be operated by the family unit, the chances of full utilization of technical equipment decline. Under such conditions, less efficient utilization of machine and of building equipment in family farms compared with large farms is to be noticed. The increasing volume of production per unit of land is often accompanied by a declining volume of production per unit of labour, because the efficiency of the individual worker can no longer be so adequately supported by technical equipment. This process is more pronounced in the family farm than in the large farm which, under these conditions, can still use technical equipment more readily. Against these now very apparent advantages of the large-scale farm in comparison with the family holding, the following disadvantages are to be found. The more diversified the soil utilization becomes and the greater the importance of obtaining fullest utilization of the productive capacity of the soil, i.e. of getting

the highest possible yields per unit of land, the more vital become the fine details of all technique. The full utilization of optimal dates, the exploiting of the smallest areas of land, the accurate execution of all work, are all factors which now gain increasing importance. But the larger the farm, the more difficult becomes the control of these factors; supervision becomes difficult, the more one must rely on hired workers not personally interested in the results of their work. The personal interest in the family unit and the greater possibility of obtaining the fullest results by personal effort counterbalance many of the technical advantages of the large farm—on the assumption of an equal standard of professional training. It is extremely difficult to ascertain these various advantages and disadvantages in terms of figures. Attempts have been made in this direction, but the results are usually unsatisfactory, because the personality of the operator is the deciding factor, and this factor, not expressible in figures, outweighs the others.

The next system to consider is that in which live-stock enterprises are combined with the diversified soil utilization.

The development of the live-stock enterprise usually entails greater outlay on buildings, at least in all zones with unfavourable climate. This means a greater burden of building capital for the family unit, because where the number of live stock is small the utilization of the buildings is inferior compared with the large farm; that is to say, the unproductive outlay for equipment that can be only inadequately utilized is here still more noticeable. But the advantages of better utilization in the large farms are restricted; there are limits, soon reached, beyond which the utilization of the buildings does not grow, because the optimal size has been reached and no further advantages are to be gained by larger buildings. This drawback of incomplete utilization of buildings in the live-stock enterprise of the family farm is counterbalanced by the greater chances of individual treatment of the animals. These advantages are particularly important wherever high efficiency of live-stock production is demanded. The counteracting advantage of the large-scale farm is that it can employ specially trained men for the various types of live-stock. But, on the other hand, there are increasing dangers in collecting together great units of live-stock, especially when great physiological demands are made upon the animals. As soon as the management unit of high-yielding animals grows too large, the dangers of disease become so imminent that they completely outweigh all advantages of technical equipment and of marketing that might be derived from the large size of the unit.

Again, these various advantages and drawbacks of family farms and large farms can scarcely be expressed in figures. If it is attempted to arrive at precise conclusions as to the productive efficiency of the different size units, such calculations can only be made for strictly bounded areas with uniform physical and economic conditions, but, even in such cases, the calculations must include many errors, because the issue is too strongly influenced by the undefinable personal factor of the operator.

What are the external physical and economic conditions which point, assuming that we have the choice, to one or the other pole, to the family farm or to the large-scale farm? The more restricted the food area of an economic unit, i.e. the more importance that must be attached to a high production of food per unit of land, the more emphasis must normally be given to the family farm as applying the greater amount of labour per unit of land. This tendency can the more readily be followed, the higher the educational status. If, on the other hand, the economic unit has surplus supplies of land, and therefore the full utilization of the labour unit is most important, and if, further, there are great differences in the educational standards of the population, then the trend must shift more to the large units, because in these units, by means of the superior training of comparatively few operators, a higher level of efficiency of all labour employed can be attained.

2. What are the demands of national economy upon agriculture, and how do the family farm and the large farm stand in relation to meeting these demands? Primarily, a certain volume of food production is required of agriculture. If sufficient land is available and if only a limited amount of labour can be devoted to food production, preference must be given to the forms of organization which give the greatest productive efficiency to the unit of labour. We have seen that this can be attained both in family farming and in large-scale farming. The volume of food produced per unit of labour and also the surplus marketed may be equal in each form of organization, if only the family farm can obtain full technical equipment and land enough for complete utilization of machinery. The factor deciding which form is to be preferred will primarily be the educational status of the population. This factor strongly influences the farming ability and also the personal morale of the individual.

If, on the other hand, there is a shortage of land, but a numerous population in the economic unit, i.e. if high demands are placed on the output of the unit of land and on the volume of processed live-stock produce, diversified farms with an intensive form of soil utiliza-

tion and with a strongly developed live-stock enterprise must be aimed at. There is more likelihood, therefore, of a tendency to give preference to the family farm, although it may produce less per unit of labour and may have a certain dead burden of inadequately utilized buildings and technical equipment. This policy may be pursued as long as the total volume of food production (vegetable and animal) per unit of land is higher than, or at least equal to, the output per unit of land of the large farms. We have already seen that there are great possibilities in this respect. But the question must be considered, whether the cost of production is not unduly high owing to the unproductive outlay for incompletely exploited buildings and machinery; for, if we supply the family holdings with only very little land, this dead outlay increases very materially. For instance, on German peasant holdings of medium size, the investments per unit of land in buildings and machinery are considerably higher than on large farms, although the greater outlay does not represent a more efficient technical equipment than that of the large farms. The example of the Canadian and American wheat farms proves to us that the family farm need not always be encumbered with more unproductive building and machinery investments than the large-scale farm. But when we come to compare larger and smaller farms organized for mixed farming with strongly developed live-stock enterprises, under otherwise equal conditions we note this increased burden on the family farms, and we must study the question, whether the resultant increase in costs of production is not a danger to national economy and therefore undesirable.

If we want to arrive at clear conclusions, we must first of all decide whether national economy primarily demands the cheapest possible production or whether other national demands, also of purely economic character, be more important. In reviewing the development of the great economic crises of the recent decades and also of the past century, I believe that their underlying causes were mainly a disturbance of the balance between all branches of production, and a disproportionate relationship of production of agricultural and industrial goods and of the capacity for the consumption of these goods. If we look particularly at the great agrarian crisis of the post-War period, we find that opinion varies as to the causes. The crisis primarily made itself felt in the complete breakdown of the system of distribution, that produced a state of affairs in which part of humanity was stifled in abundance whilst in other parts of the world millions were faced by starvation. Certainly, the collapse of the distributing system, upset by political action, by

currency policy, and other influences, was to a large extent to blame for the spread of the crisis. But are the causes not more deeply rooted than in the distributing system? Are they not to be sought in an unbalanced development of the volume of production in the various economic sections and in the varying consuming capacity of these sections? Is it not the case that a very definite balance in production and consumption rules the economic situation, and is it not far more important to strive for such a balance, to give equilibrium of production and consumption within an economic unit, rather than to regard the cheapest and most rational production as the sole economic goal?

This brings us to the second important problem which agriculture has to face in national economy. Agriculture must not only provide food, but must also act as a market for the products of other economic sections. To what extent in this connexion must the cheapest forms of production of food be stressed in spite of an ensuing low consuming capacity for industrial commodities, or to what extent can a form of agricultural production working at somewhat greater cost be justified on the grounds that in this case agriculture becomes a great consumer of industrial commodities in the broadest sense of the word? That will depend upon the structure of the economic unit in question. If this economic area is densely populated, agriculture must aim at the highest possible production per unit of land, even if this entails a higher outlay on means of production and other commodities which indirectly increase the cost of production.

Under such conditions, there will always be the tendency towards the family type of farm, for under otherwise equal conditions these family units have greater capacity for consumption of industrial goods (means of production and of subsistence) and therefore tend to strengthen the home market; they produce large quantities of food per unit of land and therefore create powerful economic circulation in which production and consumption meet.

It is, of course, extremely difficult to find the limit at which the great consumption of industrial goods on the part of agriculture, which does not tend to reduce the costs of agricultural production, develops to such a stage as to lead to too costly forms of food production, which in turn lead to a reduced consumption of agricultural produce. I do not believe that our economic methods can manage to calculate and to fix this limit, which must depend on innumerable and most various factors. The collapse of the world's economic system proves to us how difficult such calculations are, especially on a large scale.

The failure of world economics to balance production and consumption in the various sections, resulting in endless economic crises, has fostered the growth of national economic units which now seek better balance in more restricted economic areas. It is well known what difficulties ensue, and particularly what difficulties arise in the exchange of goods between these national units which, in balancing their individual economic systems, have arrived at the most divergent price levels.

Increased home exchange, however, of goods within the narrower boundaries of such restricted economic units gives greater assurance and inner power to these units, and for such a development in highly industrialized countries the family farm offers greater scope than the large farm. In such an economic system, the family farm is also a more valuable member, because it is more elastic in consumption. As the business expenditure of the family unit is to a high degree influenced by personal consumption, this factor is far more elastic in consumption, although not in production, than in the budget of the farm using hired labour. This is the reason for the greater crisis-resistance of the family holding compared with forms of agriculture based entirely on hired labour. Under such economic conditions and with a good educational status of the rural population, the proportion of the large farms among the total of agricultural holdings can be fairly low.

3. Up to now we have confined ourselves to the economic problems of agriculture. But beyond all economic functions, the rural population has another significance in the life of the people. In the development of all civilized nations, a glance at history shows that the life and growth of all nations is completely linked to the development of the rural population of the nations. In the growth of the cities, any shift in the relationship of rural and urban population in favour of the latter is full of danger to the whole nation. We know that in the cities the families die out in a few generations; we know that the greater cities cannot maintain their population by means of their own birth surplus; they are dependent upon the steady influx of surplus rural population.

Thus the rural population is the permanent source of regeneration of the life of the people and a constant source of national vitality. The fostering of the rural population is not only important in a numerical sense; it is in my opinion of decisive importance to the development of the national character. I do not wish, however, to enter into these questions in detail as they are mainly influenced by ideals of *Weltanschauung* and faith.

How do the forms of organization, family holding, and large farm with hired labour, bear upon the problems touched upon? Does the family farm provide for a more populous country-side? Under equal physical and economic conditions, it does. In this case it forms a more abundant source of increase of population than the large farm. A quantitative study of the population policy must therefore give preference to the family holding. The peasant, in closest touch with his soil, also shows a certain superiority to the farm labourer. The ties of the soil, growing from work on soil of one's own, the sense of a life duty fulfilled; these are more than a source of subsistence. This feeling, that makes work more than an occupation providing the means of existence, that makes it a vocation and an inner calling, must of course mould most powerfully the spirit of man. This perception is the base of systematic promotion of the peasant in Germany to-day. The German word *Bauer* is more to us than the English word 'peasant', which in English and American usage is always associated with a certain backwardness. The *Bauer* is to us not a man who engages temporarily in agriculture, as some farmers do, in order to earn his living, and who is willing to exchange this profession for any other seeming to offer more profit.

In the study of the economic problems of family farm and large farm, advantages and disadvantages were on both sides; one could often be in doubt which form should be preferred. From the point of view of national economy, some aspects of production and consumption left the question open. But from a sociological and biological viewpoint, the superiority of the family holding is beyond doubt, subject to the condition that one can make this holding a true peasant homestead. I think these considerations will influence the development in the direction of the family holding; the economic problem will mainly be to find forms and equipment for the family farm, which enable it to compete in technique with the large farm.

Finally, I would like to touch upon the question, which form of ownership is to be aimed at in farming, State farm, rented farm, owner-operated farm, and in the case of the latter, individual ownership as family holding, or collective ownership.

Let us first examine the State farm and attempt to determine for what purposes State ownership appears suitable. In doing so, State management appears to me to be primarily desirable wherever, in any form of production or distribution or in any service, a monopoly must be attained, because very unequal service is required and the public is best served if a total efficiency is reached by amalgamat-

ing a great number of small services, each in itself not economic, but together providing important service to the community. This is the case with the postal service, with transport and railway services, and also in the production and distribution of other goods and services such as electricity, water, &c. A further condition for efficient operation of State enterprise appears to me to be a perception of the range of duties and easy supervision of all measures. In such enterprises, one must be able to act according to clearly drawn-up plans, with precisely measureable processes and with easily controllable decisions, for inevitably State management leads to a certain development of red tape. Bureaucratic management will only work efficiently under the conditions just enumerated.

How does agriculture lend itself to these conditions? Action according to precise plans drawn up in figures is exceedingly difficult, because the constant changes due to climate and weather continually call for new decisions which must be made on the spur of the moment and immediately carried out. That is a form of action exceedingly difficult under State management. A further condition was that all measures carried out should be easy to control as to their efficiency. In the case of the taking of decisions, that again is very difficult in farming, because very often actions that were at the moment correct prove inefficient owing to subsequent change of conditions (weather). Therefore, State management in agriculture often hampers the decisions of the responsible officer and checks his willingness to assume responsibility. Important decisions are not taken at the critical moment and, instead, directions of the superiors are asked for.

A classic example of this development was that of the Russian *Soukhoz* farms. Here the development reached such a stage that finally all important decisions were only made at the order of a central office which decreed when to plough, when to seed, when to harvest, &c. Any one who had the opportunity of examining these farms could estimate the immense damage done to their management by this system. State management appears to me, therefore, the most unsuitable form of management conceivable for farming.

What about the rented farm? In earlier papers we have heard so much of the advantages and disadvantages of rented farms that I need not deal with this problem. In spite of all we heard, I am convinced that the owner-operated holding is the type to be aimed at, supplemented, however, as far as necessary by rented farms.

The question must still be faced, whether, in view of the inadequate utilization of greater technical equipment on family holdings,

these difficulties should be met by loosening the individual ties and by co-ordinating a greater number of such holdings into a collective unit. I consider co-operative action for dealing with difficulties of marketing and for the utilization of certain technical means of production, which the individual farm cannot make use of, perfectly feasible, as long as this does not sever the ties of the individual to the land. As soon as this occurs, I believe that the sociological damage, as well as the disadvantages resulting from the inevitable loss of labour elasticity due to the dependency on greater economic units, will be so great as to weigh heavier than the technical deficiencies of the family farm.

The progress that can perhaps be achieved by collective farming, as compared with the efficiency of individualistic farmers, can only be great if the educational status of the individual is relatively low. But even then, the surer path of progress in agriculture seems to me in the long run to be the raising of the educational status of the individual—of the peasant. This path also appears to me the more beneficent to the health and welfare of the nation, whereas collective agriculture, in spite perhaps of momentary successes, appears to endanger the great values which are to be found or to be created in an effectively developed peasant agriculture.

FARM ORGANIZATION WITH SPECIAL REFERENCE TO THE TECHNICAL, INDUSTRIAL, AND ECONOMIC DEVELOPMENT OF AGRICULTURE

THIRD OPENING PAPER

H. R. TOLLEY¹

Administrator of the Agricultural Adjustment Administration, Washington, D.C., U.S.A.

SINCE the subject under consideration, 'Farm Organization with Special Reference to the Technical, Industrial, and Economic Development of Agriculture', is so broad, I have felt that I needed first of all to set forth a working definition of the term 'farm organization' and, secondly, to limit my discussion to farm organization in the United States. I shall assume that farm organization in other countries will be discussed by other speakers on this session of the programme.

The term 'farm organization' may be used in several senses. In one sense, for example, it may be used to characterize the general political, economic, and social structure in agriculture in contrast to that in the other industries which make up the national economy. In another sense it may be used, and frequently is in the United States, to designate a particular body or group of farmers associated in a common effort to promote their political and economic interests. In still a third sense, the term may be used with reference to the organization of farms or farming systems in terms of the crop and live-stock enterprises usually handled, the proportions in which they are combined, and the methods of production used. Each of these concepts, as well as many others that might be mentioned, are significant from a given standpoint, and the one to be used must depend upon the question under consideration or upon the particular objective in view.

In this discussion I shall use the term in the third sense, i.e. the

¹ The author wishes to acknowledge the help of O. V. Wells and F. F. Elliott of the Programme Planning Division, Agricultural Adjustment Administration, in the preparation of this paper, and to indicate that much of the material here presented is based upon, or drawn from: Theodor Brinkmann, *Economics of the Farm Business*, English edition translated by Benedict, Stippler, and Benedict, University of California Press, 1935; *Regional Problems in Agricultural Adjustment*, prepared under direction of F. F. Elliott, Bulletin G-31, March 1935; and Bushrod Allin, *Soil Conservation—Its Place in National Agricultural Policy*, Bulletin G-54, Agricultural Adjustment Administration, United States Department of Agriculture, May 1936.

'internal organization or economy of farms'; and I shall direct attention primarily towards technical, economic, social, and governmental developments in the United States as they are related to or have effected the organization and operation of farming systems.

Farm organization, in this sense, presents a varied picture in the United States. In order that you may understand more readily what I have to say with respect to the effect of technical, economic, and social developments upon the internal organization and operation of farms in the United States, let me briefly sketch the geographic variations in farming systems in the United States and indicate some of the broad underlying factors responsible for them.

Owing to the wide expanse of territory and to the varied physical, topographic, climatic, and economic conditions prevailing, there are few, if any, countries in the world with a more diverse agriculture than is to be found in the United States. Although there is a wide diversity in the kinds and varieties of agricultural products grown, there are, in fact, fairly distinct patterns in which the different regions and areas combine these different enterprises into farming systems.

The number of such areas that may be differentiated obviously will be determined by the degree of refinement desired. The agriculture of the United States can be divided into 12 major agricultural regions and into 100 sub-regions. Certain of these regions, such as the Corn Belt of the Middle West, the Cotton Belt of the South, the Wheat and Small Grain Regions in the Great Plains, the Range Live-stock Region in the Mountain and Great Basin States, the Dairy Region of the Lake and North-eastern States, are concentrated in clearly defined and contiguous geographic centres; others, such as the Fruit and Mixed Farming, Truck, and Special Crops Regions, represent several scattered but clearly defined local type-of-farming areas. When combined, these comprise a group of areas that have problems essentially similar in character.

In the Middle West, for example, is found the Great Corn Belt of the United States. Throughout the region the land is level with deep, warm, black soils, rich in lime, nitrogen, and organic material. These soils are remarkably fertile and, when associated as they are with high day and night temperatures, ample rainfall, and a reasonably long growing season, are almost ideal for the production of corn. Although corn is the most important crop, oats, barley, wheat, and hay are also important, with the small grains being sown in the fall after corn cultivation is over and before harvesting is started, thus serving as excellent nurse crops for getting the hay and pasture crops established.

The feed grains and hay produced in the Corn Belt are largely marketed through live stock. Approximately 75 per cent. of the hogs commercially slaughtered in the United States are produced in the Corn Belt and the closely associated General Farming Region. The great bulk of the grain-fed cattle coming to market are also fed in the Corn Belt.

North of the Corn Belt, and in the North-east, where the climate is cooler and the soils not so rich as in the Corn Belt, the land is better adapted to small grains, hay and pasture, rather than corn; and this, together with the fact that a large urban population is located in or close to the area, has resulted in the development of the Dairy Region.

Cotton is the important crop in the Cotton Belt of the South. The northern boundary of the cotton crop, which is a sub-tropical crop requiring a relatively high temperature which increases through the growing season, is largely determined by the northern limit of the 200-day growing season, while the western boundary is determined by the line of 20-inch annual rainfall. Cotton is the chief crop in the South because of its exacting climatic requirements, and because a large supply of relatively low-priced labour is available in the form of a dense negro population. In addition to cotton, most farmers in the South endeavour to grow enough corn to supply cornmeal for home use and feed for work stock.

Cotton, however, does not get first choice of the land throughout the South. Tobacco is as exacting as cotton from the standpoint of climate and is much more exacting with respect to soil. On the sandy soils in the eastern and south-eastern coastal plain, flue-cured tobacco is the chief cash crop, and this area, together with the burley and fire-cured tobacco areas in Kentucky and Tennessee, make up the Tobacco and General Farming Region.

The General Farming Region between the cotton and tobacco sections of the South and the Corn Belt of the North is a transition region in which no one enterprise is dominant. Corn, hay, and small grains are important crops, and live stock, including poultry and sheep, are found throughout the region.

The important wheat regions are the Hard Winter Wheat Region centring in Kansas, the Hard Spring Wheat Region in North and South Dakota and Montana, and the Soft Wheat Region in the Pacific North-west. Thus, they are located on the level Great Plains and in the level to rolling Pacific North-west where large fields, relatively dry soils, and level lands are favourable also to the use of large-scale machinery, which means low costs, even though only low

or moderate yields are obtained. The improvement in machinery, especially the development of the combine and tractor, together with a relatively good market demand and several years of above-normal rainfall in the decade ending about 1930, resulted in a rather rapid westward expansion of wheat growing in the Great Plains, with the result that a considerable acreage of marginal and sub-marginal land was brought under cultivation. Grain sorghums are the chief feed-grain crop in the Hard Winter Wheat Region, while barley, rye, and flax are important crops in the Hard Spring Wheat Region.

The Range Live-stock Region of the United States is located in the arid and semi-arid West. This region, which extends from the Flint Hills in Kansas to the Pacific Coast and from the mesquite grass and coastal ranges in southern Texas to the plains of northern Montana, is a great breeding ground for feeder and grass-fat cattle, and for sheep. All types of ranges are included, and since practically none of it can be cultivated, it must be utilized by the grazing animals, usually cattle or sheep, although goats are occasionally important. There are irrigated valleys and small dry-farming areas located throughout the range region, which usually produce hay and some grain which is used for winter feed.

In addition to the seven great regions just described, there are five other regions or groups of type-of-farming areas. These include a group of mixed-farming areas in which dairy, truck, specialized live-stock, and general-crop farms are intermixed, usually located adjacent to, or around, large cities and chiefly influenced by the market factor; the fruit and mixed-farming areas, the self-sufficing areas, characterized by a rough topography, small fields, and an extremely low cash income per farm; the special-crop areas, located where the climate and soil are especially favourable to the production of such specialized crops as sugar beet, sugar cane, rice, field beans, or potatoes; and the truck area, located either close to the great urban centres of population, or in areas where the soil and climate are especially favourable to truck-crop production.

Actually, of course, the several regions which have been described are closely inter-related. The Corn Belt obtains feeder cattle, and to a lesser extent sheep, from the Range Region, while it ships feed grains to the East, the West, and the South. Butterfat production in the Corn Belt affects fluid milk prices in the North-east; lard produced from mid-western hogs is sold in direct competition with vegetable-oil shortenings manufactured from southern cotton-seed, and vegetables produced in such widely separated areas as the Phila-

delphia-New York area, the Norfolk area in Virginia, and the Winter Garden area in southern Texas so supplement and compete with each other as to provide American consumers with a continuous supply of fresh vegetables the year around.

It should also be noted that the great bulk of farms throughout the United States are family-sized farms, with the family supplying the most of the labour and the head of the family, even on tenant farms, assuming to a considerable degree the responsibility for the system of farming followed and for the actual operation. There are a small number of large farms, including some corporation owned farms, but these are not important. The only outstanding exception is the plantation system in the South, where the 'share-cropper' has a status somewhere between that of an agricultural labourer and a share-tenant in other parts of the country. The proportion of tenant to owner-operated farms is high in both the South and the Corn Belt.

Within each of the broad general type-of-farming regions, or areas, there are also to be found wide variations on individual farms, particularly with respect to the way in which the various crop and live-stock enterprises are combined into farming systems. Many factors have contributed to these variations in the crop and live-stock combinations handled by different farmers following the same general type of farming. One of the most important of these is the variation in soil, topography, and drainage of farms in the same locality. Although conditions within a given area may be generally uniform, in specific localities and on particular farms a great deal of variation is possible. Any one of these may force the farm operator to adopt a crop and live-stock organization which may vary considerably from what the majority of the farmers in the area follow.

The location of the farm relative to markets, both for commodities to be sold and to be purchased, also has an influence. The location is, of course, measured in terms of transportation facilities and costs and of market organization. The controlling principle is the minimization of transportation, processing, and selling costs which intervene between producers and consumers for all the products for which there is an effective (either direct or indirect) consumer demand.

Another factor influencing farm organization has to do with the availability of capital. A farmer, due to limitations of capital or credit, may be unable to expand his business, or to produce as intensively as he otherwise would, were capital not a limiting factor. Variations in family labour supply also cause differences in crop and

live-stock combinations. Farmers with available family labour oftentimes will add supplementary enterprises to their business in order to utilize such labour and render it more productive; or may, in the short run, produce more intensively, i.e. sell his labour cheap in order to pay debts and taxes and accumulate additional capital.

Still other factors are the supplementary, complementary, and competing relationships between enterprises, or the factors affecting diversity. Because of the differing requirements of the several agricultural enterprises, farmers usually find it to their advantage to combine several enterprises into a farming system in order to obtain a continuous or even employment of labour and equipment, in order to obtain the best utilization of the several plant foods in the soil, and in order to convert the products of the several enterprises into their most marketable form.

The tenure of the farm operator and his degree of indebtedness likewise play a part in determining the particular combination of enterprises a farmer adopts. It usually happens that tenant operators do not have complete freedom of choice as to the operation of the farm. Usually having possession of the farm but for a limited period of time, the tenant does not feel that he can afford to make improvements, add fertilizer, and adopt a permanent cropping rotation unless he is compensated for such outlay.

The amount of mortgage debt also may cause farmers to adopt systems of farming which are different from what they would handle, were they not encumbered. An encumbered farmer is more likely to work harder to push his resources to the limit of profitability in an attempt to make the farm yield as much as possible.

Then, finally, the personal likes or dislikes and aptitudes of the farmer play a part. Some farmers are more alert to their economic opportunities than are others. They respond more readily to changes in economic conditions and attempt to take advantage of every new situation. Other farmers are less 'price sensitive' and are influenced more by custom and established ways of doing things. These farmers, therefore, make changes very slowly in their organizations and practices.

Apart from the factors just discussed, the rate or state of economic and social progress has an important influence on the organization of farms, as does the role which government plays in the way of legislative and regulatory measures with respect to production and marketing. Changes in demand for agricultural products, for example, caused either by changes in *per capita* consumption, in population, or in foreign trade, influence not only what a farmer does in a

particular year, but also may be the primary considerations which lead him to shift his type of farming entirely.

Economists usually have reasoned: as prices change, entrepreneurs respond by shifting enterprises or combinations of enterprises so that total production of the commodities whose prices have been lowered will be curtailed. But experience in the United States during the past decade indicates that, in a period of declining prices, such changes are made only very slowly by entrepreneurs. In fact, in 1932 and 1933, acreage and production of cotton, wheat, corn, and tobacco in the United States were practically as great as they had been five years earlier, although in this five-year period prices had fallen precipitously. On the other hand, the Agricultural Adjustment Act of 1933 and the Soil Conservation and Domestic Allotment Act of 1936, which gave to agricultural entrepreneurs an added incentive to shift away from the production of commodities for which demand had declined, and to adopt systems of farming which conserve the soil and restore fertility, have already had a profound influence on the organization of individual farms in the United States.

With this discussion of the geographic variations of farming systems in the United States and some of the factors responsible for them as a general background, I would now like to consider the relation of some of the broad technical and economic developments now under way in the United States upon systems of farming and agricultural organizations.

The developments which I consider most significant are: (1) the trend towards mechanization of the processes of agricultural production; (2) the effort to adjust agricultural surplus to the changing demand situation which grew out of the World War, the expansion of production in competing areas and the rise of nationalism; (3) the increasing interest in, and the realization of, the need for soil conservation in order to maintain fertility and to preserve or increase the producing capacity of the nation; (4) the use of the centralizing powers of government by farmers in the development of national agricultural adjustment programmes.

Although agricultural mechanization has almost completely changed the methods of agricultural production in some parts of the United States since the middle of the nineteenth century, it should be recognized that it has progressed at different rates in different parts of the country.

In general, agricultural mechanization has developed fastest, and may be expected to continue so to develop, in areas characterized by level land, by relatively large farms operated by farmers with a

reasonable amount of capital or credit, and where considerable blocks of new land were being brought under cultivation. Level land and large fields, of course, lend themselves readily to mechanical operation; farmers must have, or be able to obtain, money in order to acquire the necessary machinery; and in areas where new land is being brought under cultivation, labour is usually scarce, and farmers are not hampered by tradition and the possession of old machinery from adopting any new machine or cultural method which appears to offer more efficient operation.

As already noted, these several conditions were all present in the wheat-raising areas on the Great Plains through the decade ending about 1930. A similar condition existed along the western edge of the Cotton Belt. Mechanization has proceeded more slowly in those areas which are characterized by rough and broken topography, small and irregularly shaped fields, and a self-sufficing type of farming, and in the South where the failure to develop an efficient mechanical cotton picker and the presence of a dense rural population have resulted in a marked lag.

The motor truck has supplanted horses generally for farm to market transportation, and the development of two- and four-row implements and of the general purpose tractor has tended to economize or supplant horse labour throughout the general farming regions and the Corn Belt. Altogether the decline in horse and mule numbers in the United States through the last two decades has released about 30 million acres of crop lands, once required to produce feed, for the increased production of commercial crops either for increased domestic consumption or for export.

The further development of agricultural mechanization apparently depends upon inventive genius, the maintenance of reasonably sized farming units, and the continuance of the opportunity for the surplus farm population to find industrial or other urban employment. If mechanical devices which require any considerable capital investment are to continue to be adopted generally, however, farmers must be reasonably prosperous, and the surplus farm population must be able to find industrial employment in order that farms will not be subdivided, and that the ratio of labour to land will not increase to the point where hand labour is cheaper than mechanical operation.

Although mechanization and the development of better strains and varieties have lowered costs of production, they have, at the same time, increased the supply of agricultural products available for market. This increase in supplies in the United States accompanied

by similar increases in competing areas outside of the United States, rising tariffs, and a diminishing volume of international trade both in agricultural and industrial products, by 1931 and 1932 had brought about a situation in which total supplies of the commodities most important in American agriculture were entirely out of line with effective demand. In terms of total acres, there were from 30 to 50 million acres of land in harvested crops for which there was no ready market at prices at all remunerative to farmers. This maladjustment was further aggravated by the industrial depression and by the fact that many producers maintained or increased production in a vain effort to maintain their incomes.

The sales of an individual farmer are usually so small as to have an infinitesimal influence on the market, so that it is to the interest of the individual to sell as much as possible, even though he well may know that similar action on the part of all producers, or even the bulk of the producers, will certainly break the market. This fundamental conflict between the interest of the individual and of the group, which can be reconciled only by group action, is the basic reason for the existence of many of the marketing co-operatives, especially milk marketing, in the United States, and this was one of the important reasons for the passage of the original Agricultural Adjustment Act early in 1933.

Another great force or development affecting the organization of farms in the United States to-day is the increasing interest in, and need for, soil conservation. Proper farming practices and crop rotations must be adopted on every farm, if soil fertility is to be maintained or improved and erosion prevented.

The cropping systems and practices that have been in use on much of the farm land of the country—the good land as well as the poor land—are such as to result in the continuance of decline in fertility and of an increase in the losses from erosion by wind and water. An erosion survey conducted by the Soil Erosion Service in 1934, covering 1,907 million acres—the entire rural land area of the United States—showed that on 578 million acres—between one-third and one-fourth of the total—little or no erosion of any kind was occurring, but that sheet erosion was prevalent on more than 800 million acres, severe gully erosion on more than 300 million acres, and wind erosion on another 300 million acres.

Secretary Wallace has stated recently that water erosion has practically destroyed 50 million acres of farm land and seriously damaged another 150 million; that wind erosion has destroyed 9 million acres, and that it is active on another 70 million acres. In many parts of the

country, the systems of farming, the terrain, and the climate all combine to accelerate erosion and loss of fertility. One hard rain sometimes carries away as much as an inch of top soil from a sloping cultivated field.

From the short-run standpoint of the individual farmer, it is usually most profitable to put a high proportion of the farm in cash or market-crops, or crops which can be most quickly converted into live stock. In the United States, this means that there is a tendency to put as high a percentage as possible of the land in the South and the Mid-west into clean cultivated crops, which are especially conducive to water erosion and the extraction of soil fertility, and as high a percentage as possible of the land on the semi-arid Great Plains and the Pacific North-west into wheat or some other small grain, which leads to over-expansion and in dry seasons to wind erosion. And in the Range Region, and on the pastures throughout the general-farming, corn-growing, and dairy regions, the tendency is to graze as many animals as is possible in any particular season, which is conducive to deterioration of the vegetative cover and to accelerated erosion.

On an owner-operated farm it is to the long-run interest of the farmer to adopt a rotation or farming system, and such practices as are desirable from the standpoint of soil conservation, provided he knows what is needed, and provided he is financially able to consider his long-run interest. A farmer with a heavy mortgage, however, or even a farmer on a small-sized unit with a large family to support cannot usually afford to consider anything other than the short-run situation. On a tenant-operated farm where the tenant has only a short-term lease, and where any effort to conserve or improve the soil accrues to the benefit of the landlord or some other tenant, the tenant can only afford to consider the short-run situation. Soil conservation is to the long-run interest of farmers, of their children, and of the nation. The question then is not whether it is needed, but rather as to how it can be best obtained.

The last major development affecting farm organization in the United States I shall mention is the inauguration, in recent years, of national collective adjustment and conservation programmes. The low farm prices and low farm incomes that came when supplies entirely outran effective demand in 1930 to 1932 led the farmers of the United States to ask for and to obtain from their Government the Agricultural Adjustment Act. This Act provided a mechanism through which the farmers of the country, especially those of the Cotton Belt, the Wheat Regions, the Tobacco Areas, and the Corn

Belt, could collectively adjust the organization of their farms. At the same time, it provided an economic incentive in the form of a 'benefit payment' to each farmer who would co-operate with his fellow farmers in remedying a nation-wide maladjustment. In 1934 and 1935 more than 3 million farmers entered into individual contracts with the Secretary of Agriculture to make changes in the organization of their farms; as one example of the mass result of the adjustments thus made, the cotton acreage in the United States was changed from more than 40 millions in 1932 to less than 30 millions in 1935—the result of a greater or less change in the organization of a very large percentage of the cotton-producing farms in the country.

The principal change in the organization of the millions of individual farms co-operating in the programmes was a shift of part of the acreage formerly in the intensive soil-depleting crops to extensive soil-conserving crops, e.g. from cotton or corn or wheat to grasses or legumes. Generally the changes were in the direction of what the agricultural economist would term 'better farm organization'. The primary purpose of the movement was, of course, to enhance farm prices and to raise farm incomes by balancing supplies with the effective demand, and to stimulate industrial recovery by increasing the purchasing power of farmers for the products of industry. Better farm organization and conservation and restoration of soil fertility were secondary achievements.

Then on January 6, 1936, the Supreme Court of the United States, by a 6 to 3 decision, declared unconstitutional the production adjustment phases of the Act. The majority of the Court stated, among other reasons for their decision, (1) that agriculture is a *local matter* over which the States, rather than the Federal Government, have jurisdiction; (2) that the contracts between the individual farmers and the Secretary of Agriculture, which called for payment of a direct reward to the farmer for changing the organization of his farm, were a form of 'economic coercion'; and (3) that the processing taxes, because of the manner in which the proceeds were being used, were unconstitutional.

Thus it seemed that the current interpretation of our Constitution had destroyed the opportunity for farmers and the Government to work together to bring about adjustments in agriculture—changes in the organizations of farms—even though they are recognized generally to be in the interest of the nation as a whole as well as in the interest of the farmers, but which the farmers, acting as individuals without the aid of the Government, have been and still are incapable of making. But within two months the Soil Conservation and

Domestic Allotment Act of 1936 became law. Under this law farmers in every type-of-farming area in the country—probably more than 4 millions of them—are now working together voluntarily with the aid of the Federal Government to develop farming systems and farming methods that will check the destructive erosion of our farm land and begin to rebuild its fertility. On most farms an increase in soil-conserving or soil-building crops will be accompanied necessarily by a decrease in soil-depleting crops and, since the crops that had been in excess supply prior to the Agricultural Adjustment Act—cotton, wheat, tobacco, and corn—are the principal soil-depleting crops, the Agricultural Conservation Programme, as an important by-product, is preserving to a considerable extent the balance that had been achieved through the adjustment programme.

Each farmer participating in the programme is to receive a grant of money from the Secretary of Agriculture, the size of the grant depending upon the extent to which the farmer has increased his soil-conserving crops and practices, and the short-run loss of income he has suffered thereby. The Act is being administered through associations of producers, the State Agricultural Colleges, and the Agricultural Adjustment Administration of the United States Department of Agriculture. The crops and practices for which farmers will receive grants are based largely on the findings and recommendations of the State Agricultural Colleges. In nearly every agricultural county in the country, there is an association of farmers—the County Agricultural Conservation Association—composed of all those in the county who are co-operating in the programme. These associations, through committees of their own selection, are carrying the main responsibility in determining the extent to which each of the members of the association is co-operating in the programme. They are determining also, subject to review by the State Agricultural Colleges or State Committee and by the Agricultural Adjustment Administration, the size of the grant which each farmer will receive. In many respects, the functions and duties of the County Conservation Associations are similar to those of the County Production Control Associations which played so important a part in the administration of the adjustment phases of the Agricultural Adjustment Act.

Thus, for the past four years, the farmers of the United States and the Government of the United States have made great progress in developing a method for achieving *mass* adjustments in the organization of individual farms. These adjustments have enhanced the incomes of the farmers who participated. They have been in the

interest of the nation as well as of the farmers. They are using the processes of democracy and are in harmony with the form of government which has existed in the United States since it first became a nation.

In conclusion, I should like to point out again that the most difficult problems with which farmers in the United States are faced are problems arising from the effect upon agriculture of economic and social developments since the World War.

American farmers are, as a group, able and hard-working, and American agriculture is not badly adjusted from the standpoint of economic or natural location, or with respect to the supplementary and complementary relationships between enterprises. But as a result of economic and social developments not only in the United States, but also in many other countries as well, it has come to pass that a state of unbalance exists which has called for rather profound changes in the internal organization of some millions of farms in the United States. These changes would enhance the welfare of the nation as a whole as well as of the farmers. New relationships between the Government and the farmers of the nation and new governmental mechanisms had to be developed in order to achieve the changes expeditiously and to maintain the improvements resulting therefrom. No doubt in this rapidly changing economic and social world, the continuance of the development of relationships between agriculture and government will be desired by the people of many countries. I suspect that this offers to the agricultural economists one of the most fertile fields of service in the years ahead.

DISCUSSION

A. W. ASHBY, *University College of Wales, Aberystwyth.*

In taking part in this discussion I intend to devote the greater part of my remarks to Dr. Zörner's paper. Like all the rest of us, I hold Dr. Zörner in very high regard, but it seems to me that he is the vehicle of expression of ideas which I regard as extremely dangerous to the whole agricultural community. There seems to lie behind a good part of his paper the idea of conflict between agriculture and industry, between agricultural or rural society and urban-industrial society. It does not seem to me—indeed, I think I ought to go further and say quite definitely that I do not believe—there is any such conflict. I am sure that no such conflict is inevitable, and I am afraid that the greatest danger of such conflict arises from theorists like ourselves. Indeed, it would appear to me that the younger generation of

agricultural economists, instead of looking at the existing differences between urban and rural society, should apply themselves to ways and means of amalgamating the two groups; of raising the standards of rural and agricultural groups to the best of those established by industrial endeavour and in urban environments; and perhaps in some measure of helping other people to modify in some ways and degrees certain forms of urban society. If again we can say to ourselves in all sincerity and honesty that only small-scale production gives us an entirely satisfactory form of work and of livelihood, then should we not turn on our great urban industrial organizations and break them up into the small units in which they existed in the early part of the nineteenth century? We do not, of course, believe anything of the kind. And we must realize, all of us, that the greater material benefits and advantages which the population of the whole industrial world now enjoys have been due to specialization and division of labour in industry; to the development of science and industrial organization; and although we are as agriculturalists prepared to apply the science, we, or some of us, are not prepared even to think of the application of industrial organization to this our industry.

The general position, however, is that scarcely any one, if one, of the great agricultural communities has yet enjoyed its full share of the material benefits of civilization, to say nothing of the modern services which arise from the benefits of material civilization, because they are still in part segregated and isolated from the great national communities in which they live. My view is that, rather than further segregate and isolate them, we should try to develop forms of organization, forms of education, transport, mobility, and social habits, which, if they are good for us—for such people as are now in this Conference—are good for all other people; and that we should try to build up standards of living of the family and social habits of rural communities which will give them the greatest possible material benefits and aesthetic and psychological satisfactions which the modern industrial world can provide for them.

That is general. It is surprising to me that a man like Zörner should present to this Conference the idea that it is still necessary to maintain a big agricultural population in order to provide a market for industrial goods. It is absolutely amazing that any such idea should be presented to this Conference. If there are 50 millions of people with an average purchasing power of one hundred pounds a piece, it matters not to industrial producers whether 20 millions or

30 millions of them are engaged in agriculture. The consumption of industrial goods in total will be exactly the same. The only industrial groups which benefit from a high proportion of agricultural population are those which produce the relatively primitive and cheap industrial goods, not those that produce the higher forms.

Then there is this other strange idea for agriculturalists that it is still necessary for us to maintain a rural population in order that the urban population may be maintained. It is equivalent to good farmers, seeing their flocks dying from liver-fluke on the low-lying lands, saying: We must not clean out the ditches which breed the snails; we must breed bigger flocks on the hills in order to maintain the total sheep population. It is a policy of sheer physical and biological waste and nothing else, but in fact most of the industrial countries of Europe, and certainly the United Kingdom and the United States, cannot hope to maintain their urban industrial populations on the basis of their present rural populations. We in this country have simply to look at our agricultural population which represents 7 per cent. of the total occupied people, or, including their families, perhaps 8 or 9 per cent. of the total population, or at the rural population which represents 20 per cent. of the total. If the urban population were dying out in three generations, it would become necessary for our rural population to produce people to about three times its own survival rate: that is, each adult woman in our rural population, instead of producing two children to insure survival, must produce at least six up to the age of reproduction. This when translated means, of course, that the rural population has got to raise children and forego certain modes of living in order to do it. In crude terms, the process means in Europe utter poverty for the period between marriage and the time at which the children leave the home in order that an urban population may be maintained. If that is the condition, what one feels tempted to ask is: Why maintain an urban population at all? Why not go back to the eighteenth-century condition of a population comprising (as it did in the United States) 80 per cent. agricultural and 20 per cent. industrial and commercial? Of course we never mean to go back to that.

Then perhaps one of the great ideas behind the exaltation of small-scale production is the idea that the peasant or the *Bauer* is a man who has an inner calling, a higher inspiration for industrial activity than any other person. It is a great claim to make for any class, and I think we can easily exaggerate the extent to which the desire for self-expression in production, or in vocation, has passed from the non-agricultural part of the modern world. Perhaps most of us,

certainly many of us, would be prepared to admit that the great majority of individuals require to find personal psychological and aesthetic satisfactions in their vocations. There is no reason yet why men and women cannot find these satisfactions in full in a combination of leisure and industry, leisure and occupation, which the modern industrial and commercial system can afford them. When we go one step further and say that the *Bauer* is not a man who works for profit, we should not delude ourselves by thinking of that term profit in the form in which it is commonly used. On the family farm profit means income, and, if it does not mean income, it does not mean anything in reality. If the *Bauer* is not a man who works for income, what is it he works for? Does he not work for food, for clothing, for education, and leisure occupation, for all the possible opportunities of personal development? And if he does not provide for his children the opportunities of full personal development for every one of them, is he not failing as a man and a citizen, to say nothing of failing as a *Bauer*? Certainly the *Bauer* works for profit, unless, of course, those of us who may act towards him as leaders mislead him into false standards and judgements of what is worth while in this industrial world in which we live.

There is however no possibility of really segregating a rural from a general population in any of the progressive nations, unless it is done of a set social and political policy by beginning at the pre-school or the school age and by turning children and their minds in the channels along which we, as a representative group of another type, would not like our children turned. We may do that; we may succeed in doing that; but if we do, then it seems to me this social political conflict between the urban-industrial and the agricultural-rural groups, which has been spoken of, is almost inevitable. Fortunately a good many tendencies are against the possibilities of success for this policy. There is especially the development of modern transport, and more particularly of short distance transport. In this country a connexion between the village and the road-side bus stop and the market town, or the town of 40,000 or 50,000 inhabitants, is beginning to link up the two groups of the population as they never were linked before. And there will be, as far as one can judge, an almost complete absorption of the rural group into the general social group in a very short time. This country will not be the weaker, but will in fact be socially and politically healthier and stronger as a consequence.

As I said a few minutes ago, we are, all of us, prepared to use and to foster the use of modern science in agricultural production in so

far as it may be applied to a small-scale industry. There are still a number of us who are not prepared for the full application of inventive genius in mechanical lines to our industry, and certainly not prepared for the development of forms of organization leading to higher technical standards and more economically efficient forms of production, because we are afraid that new systems may be in conflict with certain political ideas which we hold. Indeed, I would not judge unfairly, but I feel bound to judge that the key to Zörner's paper is not his faith in the peasant farm at all but his real fear of the success of forms of collective farming. However much we may fear some aspects of the Russian political system, and we all know that there are some aspects that we have to fear if they are inevitable in that system, we must not shut our eyes to the fact that at least in some parts of their collective systems they have brought progress and have increased the production per man in agriculture ten times as rapidly as it could possibly have come under any system of small-scale production which was possible in that country. And having done that, they are making possible advances in education, improvements in clothing, in housing, and in all the conditions which lead to the extension of life for the individual and the development of the higher forms of personality on the basis of the agricultural industry.

G. F. WARREN, *Cornell University, New York State, U.S.A.*

Farms in the United States are probably the smallest in the world—when measured by number of workers per farm. According to the research work of Larsen of Denmark and Buck of China, we have fewer workers per farm than in either of these countries. We also have fewer workers than formerly in the United States. Our farms have grown larger in acres but smaller in number of workers. As an exceedingly rough statement of the approximate average, we may say that the operator represents one man, other unpaid family labour the equivalent of one-half man, and hired labour one-half a man. Buck's work shows a little more than this for China. Why has this come about? Of course, there is considerable variation from the average, but farms with a labour equivalent of more than four men represent a small percentage of the total number.

Every invention of machinery favours enlarging the farm. On the other hand, progress in education and in use of machinery increases the amount of produce required to pay for an hour of labour. As Dr. Zörner has stated, the smaller units are far more flexible in ability to meet labour emergencies. The farmer works for himself as you and I work, that is, he works very hard at times and at other

times does not work much. In an emergency, he may double his hours per day as you and I do, and may double his speed for a day. Also, the wife and daughters who usually do not do much farm work may help in an emergency. By these means, a two-man farm may do as much as four to eight men's work on some emergency day and then recuperate by working much more leisurely. This is a common practice when people are working for themselves in any occupation. The last day before I left home, I did nearly a week's work measured by my standards—and have not done anything since.

Emergencies on farms more often come in the summer when there is no school. Young children then help and take pride in doing such work as driving the horse on the hay fork, hay rake, and the like. For a large farm or corporation farm, child labour is discouraged, and sometimes prohibited by law.

When a man is working for a corporation or large farm, he works at a more uniform rate. He has not the incentive to go so far in an emergency and must work the next day also. When labour is very cheap in terms of produce, as it was everywhere a century ago and as it is in the tropics to-day, the importance of saving time is much less. Other items in the cost of production are more important. When labour represents a small percentage of the cost, enough workers are carried on the pay-roll to meet emergencies.

What we call a family farm in America should not be compared with what are called smallholdings in Europe. A farm that has the equivalent of two to three men, one of whom is the operator, uses the same modern machinery as is used by corporation farms. It is not necessary that the use of this machinery be confined to one farm in all cases. Tractors, combines, and grain binders are often used for custom work for neighbours. Still another method by which the smaller farm uses modern machinery and maintains low costs is by buying secondhand tools. If the machine is used nearly to full capacity as it may be on a large farm, it is not safe to use it after there is much danger of a break-down. But this same machine may be purchased at a low figure and used successfully on a farm that might have half use for it. If it should break there is still time to get repairs and do the work.

Extension work has removed the advantage of the corporation or large farm in the scientific field. In the United States, scientific knowledge is as readily available to the small farms as to the large. Specialists in poultry, spraying, and the like are available to all.

Other advantages of the corporation farm have been made available to the small farm through the co-operative movement. In the

north-eastern States, feed, seed, fertilizers, and the like are available through co-operatives at the same price to a corporation farm or a family farm. They have a volume of business very many times what any corporation farm has ever had.

Through the co-operative land banks, mortgage credit is now available to a family farm at a lower figure than the corporation farm can obtain. Short-term credit is available through government banks at a lower figure than can be obtained by corporations.

There are, of course, exceptions. If the product sold depends primarily on advertising, and if a co-operative association is not yet developed, the corporation farm has the advantage. It costs the same to advertise one packet of seeds as a carload. Seed farms, florist establishments, nurseries, and the Walker-Gordon farms which are vitally dependent on advertising are corporations. It is interesting to note, however, that nurseries, seed farms, and the like usually have a large central farm and have much of their material grown by farmers on contract. The Walker-Gordon farms send their heifers to farmers to be grown on contracts. The men who raise the silage and hay for the cows raise it on contract. This provides cheaper feed and higher returns to the man who does the work.

O. H. LARSEN, *University of Copenhagen, Denmark.*

First of all I want to express my thanks for the three very interesting papers we have had this morning about farm organization.

For more than one reason I want to make a few remarks on some of the questions that have been discussed in these papers. I have only had the opportunity of reading in advance the paper by Mr. Bridges, and it is especially some passages in his paper that give rise to my remarks, but before going on to deal with these I want to say a few words about the tenure of land in Denmark.

I believe that Denmark has a somewhat singular position among European countries with regard to land tenure. In Denmark about 94 per cent. of the farms are in the hands of freeholders and only 4-5 per cent. are tenant farms or leaseholdings. This has not always been the case. About the middle of the eighteenth century, of the peasant farms which occupied nearly 90 per cent. of all land, there remained only 5-6 per cent. freeholdings, while the majority were leaseholdings—'life leaseholdings'—under the Crown, the Church, and the Nobility. But towards the end of the eighteenth century began a slow moving back to the old system which had existed from the beginning of the Middle Ages—the freeholding system—and this movement was increasing rapidly at the beginning of the nineteenth

century; in 1835 two-thirds of the farmers were freeholders and only one-third were leaseholders.

The movement kept on increasing, and at the beginning of the twentieth century there was only a small percentage of leaseholders left. After the War—in 1919—the Government took the initiative to abolish the remaining leaseholdings in respect to the peasant farms. Just at the same time, however, we had some new laws concerning establishment of new government smallholdings which are a new form of government leaseholdings. There were many circumstances which stimulated this movement; partly the very high prices of land which made it difficult for the smallholders to buy land for establishment of new farms, and partly because the Government wanted to try a new system instead of the old form of smallholdings which existed at the beginning of the century. Under this new system the land belongs to the Government, and the farmers have to pay an annual rent for using the soil—equal to 4 per cent. of the tax-value of the land; and besides this the smallholders can get loans from the Government for the establishment of the new buildings and equipment of the farm.

This new system has now been running for nearly fifteen years, and during this period there have been erected about 5,000 smallholdings of this kind with an average size of a little more than 7 ha. which is sufficient for a family to get a living without working for other farmers. I should say, on the basis of investigations, that it has even been necessary to have some hired labour on many of these small farms. This special form of government leasehold should actually be considered as a form of freeholding. The smallholder may keep his farm as long as he wants to; he may manage the farm quite as he likes; and he may leave it to a son or a daughter when he is getting old. He also has the right to sell the farm to another man, if he prefers to do so, only first of all he has to offer it to the Government. But apart from this special form of leaseholding, there is very little left of the old form of leaseholding and very few tenant farms—only about 4-5 per cent. of the total number of farms and a little more of total area—7-8 per cent.—because the tenant farms are mostly the bigger farms.

These are the few remarks I want to make about land tenure in Denmark before going on to discuss the very interesting papers we have heard this morning.

Mr. Bridges said in his paper that the small farms on the average have a very high output per acre compared with the larger farms. It is naturally correct, if we are speaking of the gross output per acre.

In our investigations in Denmark we divide our farms into six groups varying from less than 10 ha. for the smallest farms (averaging 6 ha. or 15 acres) to nearly 200 ha. for the biggest farms (about 500 acres), and the result shows on average for the last twenty years a gross output for the smallest farms of more than 1,200 Kr. per ha.—compared with 600 Kr. per ha. for the big farms. But if we compare the net return, we shall find that the difference is not nearly so big, varying from 150 Kr. per ha. for smallholdings to 100 Kr. per ha. for the big holdings. When the gross output varies as 2 to 1, the net return only varies as $1\frac{1}{2}$ to 1; and if we take the net return in percentage of the capital, we find for the whole twenty years that on the average there is not a very big difference between the two groups of farms, but if there is a difference this is in favour of the big farms. That is when we compare the very small farms of 6 ha. with the big farms of 200 ha. But if we take the middle-sized farms from 10 to 30 ha., we find that on the average of all the years the net return in percentage of capital is about one-fifth higher than for the small farms and for the big farms; which means, on the basis of our investigations, that it has been the farms from 10 to 30 ha. (equivalent to 25–75 acres) which in Denmark have given the best economic result. But of course the financial result will vary very much from our country to any other, and I think there are various reasons why the middle-sized farms in Denmark have given the best financial result.

First, practically all these middle-sized farms are freeholdings; less than 1 per cent. are tenant farms. For the bigger farms the proportion of tenant farms is somewhat larger; for the biggest farms with more than 240 ha. it is nearly one-third. In spite of the fact that we have not so very many of these tenant farms in our investigations, I believe that when we take the average of all twenty years, the factor of tenure has been of some influence.

Secondly, the big live-stock production which we have on the small and middle-sized farms—when we take the average of all the years—may also have had some influence, especially during the War and the first year after the War, when we had high prices for the animal products.

And last, but not least, the relatively high development of agricultural co-operation which we have had in Denmark for a great many years—partly for the sale of animal products and partly for the buying of supplies—may have had some influence upon the results of the small and middle-sized farms, because the advantage of co-operation is greater for this type of farm than for the larger farms.

I call to mind that Professor Laur of Zürich has said that only with a high development of co-operation is it possible for the small farms to bear comparison with the larger ones, and it seems to me that Professor Laur is quite right in this observation.

As Professor Zörner said in his paper this morning, it is not possible to discern distinctly between the different size-groups of farms, because what we in Germany and Denmark call a middle-sized farm—or '*Bauer-farms*'—will in Great Britain and U.S.A. be called small farms, but that is not so very important. The main point is that for us in the Scandinavian countries and in Germany these middle-sized '*Bauer-farms*' will, as far as I can see, be the most advantageous, both economically and socially. Furthermore, it has always been the case in Denmark that this type of farming has been the dominant type.

If we take our last census, the middle-sized farms from 10 to 60 ha. include a little more than two-thirds of the agricultural acreage, while the small farms under 10 ha. and the larger farms with more than 60 ha. have about 16 per cent. each. If we separate out the very big farms of more than 240 ha., we find that they amount to between 2.5 and 3 per cent. of the agricultural acreage of the large farm group.

As we have seen, the middle-sized group of farms is very important in Danish agriculture, and they have always been very important. Proportionally they were more important in former times, because during the last century the small farms increased very much, but still the middle-sized farms cover a little more than two-thirds of the acreage. I should think it will also be the most prominent type in the future, and in any case it has been the most profitable size of farm for the period for which we have made our investigations.

T. W. SCHULTZ, *Iowa State College, Iowa, U.S.A.*

Mr. Tolley, in his paper, addressed himself chiefly to the farm management adjustments that are inherent in the major agricultural adjustments now in process within the United States. These broader production adjustments are those to which the A.A.A. has addressed its efforts in the revised programme which came as a consequence of the Supreme Court decision. The land-use adjustments necessary to attain general soil conservation objectives are being emphasized.

Two years ago the staff members in agriculture, including not only agricultural economists but, in most States, the technical staff in agronomy, animal husbandry, agricultural engineering, &c., entered into a national agricultural adjustment study, the chief objec-

tive of which was to determine the crop pattern for their respective States that was consistent with soil conservation and good farm management. The project was taken more seriously in the Corn Belt and in the western States than in other regions of the United States.

It is on the results of these studies when fitted together into a national picture that I wish to report, and relate the findings thereof to Mr. Tolley's observations.

To start with, the most embarrassing question to the economist, particularly to those who assume that there is a certain automatic adjustment in the balanced use of our resources, is the question: Why is it that in the heart of American agriculture, the great Mississippi valley, there has developed a highly exploitive agriculture? There is no question that the Middle West cannot continue to grow as many acres of corn as it has in recent years, nor that the Cotton Belt can grow as many acres of cotton as it has without exploiting land resources. Similarly, in the mountain States it is a question of over-grazing.

Returning to the question of how much corn can be grown, for example, in the Corn Belt without depleting the soil and promoting erosion losses, the approach to the answer is not difficult, because of the fact that the comparative value of corn in the heart of the Corn Belt exceeds considerably the value of any competing crop. The crop land of the Corn Belt farmer is used for the growing of feeds. An acre of corn will produce much more feed than, commonly twice as much as, an acre of any other of the competing crops. Accordingly, it does not matter to the farmer whether corn is selling for \$1.00 or for 10 cents a bushel; it is to his advantage to maximize his corn acreage. In the South, the comparative value of cotton causes the cotton farmer to maximize his cotton acreage; and in the range States, it is a matter of maximizing the number of head on a specific area of range. In each of these the problem is essentially one of physical relationships and not one which has to take count of the changes in the demand side of the picture. For instance, again returning to the Corn Belt, in view of the fact that oats, barley, and hay crops are all feeds and within limits are easily substituted for corn, it follows that whether the price of corn is high or low, the ratio of values between the several feeds tends to remain fairly constant. Whether the direct demand for feed is strong or weak, a farmer in the heart of the Corn Belt attempts to grow as much feed as possible and, inasmuch as corn is much more productive in the value sense, he naturally tends to maximize his corn acreage.

The picture in Iowa can be stated in about the following terms: The severe depression years found Iowa farmers producing over 11 million acres of corn. After systematic study, it is the opinion of our agriculturalists that $9\frac{1}{2}$ –10 million acres of corn is the maximum figure that may be grown without exploiting the farm land resources of the State. This estimate assumed the farming practices customarily followed other than that of reduced emphasis upon corn.

I am stressing the fact that, in reaching the figure of $9\frac{1}{2}$ million acres as a top figure for the corn acreage of Iowa, the research staff did not involve itself in any complicated economic assumptions. However, as one moves east and west, especially to the Atlantic coast States and to the specialized crop areas of California, the problem of determining the proper use of farm land is not a matter of maximizing one crop which has a decided comparative advantage, but instead it is a matter of selecting from among a number of alternative crops, each of which can be grown in such combinations as to maintain soil resources, and whether or not it is the most profitable combination depends primarily upon the demand picture. That is, assumptions have to be made with reference to the demand side for these alternative crops before it is possible to say which combination of crops is likely to be the best use of the land. It is, therefore, not surprising that the research staff found the project of relatively little value to them in obtaining a better understanding of their production problems. As a matter of fact, the assumptions that had to be made on prospective price relationships were altogether too artificial, and appeared to them quite unwarranted.

Consequently the results of the State studies have some meaning in the farming regions where one or a few of the crops have a distinct margin in their favour in the comparative value over competing crops. Conversely, the crop pattern worked out by the State research staff has little or no meaning in those States where a large number of alternative crops can easily be substituted for one another, depending upon year to year changes in the farm prices.

The study unmistakably points in the direction of severe exploitation of farm land resources in the Corn and Cotton Belts and in the range States. The tempo of farming in these regions, in view of present practices followed, is too intensive.

One additional comment from the point of view of better conservation of land resources is that it will have to be recognized that no national formula is likely to give satisfactory results. Every farm is a unique enterprise, and it is virtually impossible to generalize the

factors responsible for exploitive farming with such subtlety as to make it possible to apply a generalized programme. In a word, the technical aspects of using land resources are truly a local affair. The specific adjustments which the individual farmer must make in his operating programme so as to reduce soil losses to a minimum are a problem that has its causal forces chiefly in the characteristics of the soil itself, and therefore tends to be local in character.

It will be found, however, that when specific adjustments are called for on a given farm there are a number of institutional arrangements which will continue to operate in the direction of exploitive farming, even though the farmer is temporarily assisted in financing an operating programme which better conserves his soil resources. Chief among these institutional factors is the landlord-tenant arrangements that are customarily found both in the Corn and Cotton Belts. Suffice it to say that should the revised A.A.A. make it financially profitable for farmers generally to follow less intensive cropping programmes for the next three or five years, at the end of that period there will be grave danger, in my opinion, of many, if not most, of the farmers who formerly were following exploitive programmes resuming their old cropping systems with all their exploitive features. The reason for this would be that the current programme does not bring about any fundamental change in the landlord-tenant arrangements, and these are such that they tend to promote the intensive cropping associated with exploitive agriculture. Other institutional arrangements might be emphasized as operating in the same direction. I have in mind the present taxation system with relatively high property tax assessed against land, and also the debt burden of farmers.

The point of my comments is this: there is little doubt but that the cropping systems which prevailed in much of the United States in the late 20's and the first few years of the 30's were too intensive to be consistent with a permanent agriculture which maintains its soil resources. The adjustment required to gear down the tempo of that part of American agriculture which has fallen into exploitive land use has not been made in such a way that it will continue, should the present 'awards' of the A.A.A. be discontinued. The purely technical task of farming so that there is less soil exploitation tends to be local in character. The institutional arrangements, however, which promote the intensive agriculture associated with soil exploitation are exceedingly important, but these have not been adjusted and are not being corrected by the approaches employed by the revised A.A.A.

F. VON BÜLOW, *International Labour Office, Geneva.*

I have asked to be allowed to speak in order to point out an aspect which, as far as I can see, has been missing in our discussion hitherto. All papers read and all contributions to discussion have considered the problem only from the point of view of the economic possibility of the farm or to some extent also of the community as such, but there has not been what I would call a social approach. The problem has not been considered from the point of view of the individual engaged in farming. It is too often supposed that a good net return in farming goes to the benefit of all those engaged in farming. It has not been sufficiently taken into consideration that this net return is divided between land, capital, and labour, and the form of farm management may have quite a different value if looked at from the point of view of the individual instead of from a general point of view. I shall leave aside here all considerations regarding farm owners and family members. I would like only to make a short remark to Dr. Zörner who stated that the town population dies out in two or three generations. That may be quite correct; but if these people who have had a chance to go to the towns had been obliged to stay on the farms, I think that in most cases there would not even be a second generation. The maintaining of the population in the country-side is a privilege only to those who take over the farm, and not to those family members who have to work on the farms with no chance of migrating to the towns.

There is a further characteristic of the family holding (whatever we call it) which is very important from the labour point of view. As things are on the family holding proper only the father and mother are really free to dispose of their time and do as they like. The other members of the family, even when they are grown up, are children in relation to the head of the undertaking. They are limited in their incomes and the use of their free time; they have not even got a special room at their disposal, which comrades of the same age would have if they had taken up another profession. It is therefore natural for them to want to get away. You may say that this fact is of no importance from the point of view of labour; but it has to be remembered that a family holding is not only a question of size. The family holding of a certain type may be a family holding in one year and employing paid labour another year. Professor Larsen observed that even smallholdings in Denmark have a hired-labour cost of about 20 per cent. of the total labour cost, and the same can be observed in many other countries. This is partly to be attributed

to the fact that at one time the family is too young to help, and therefore paid labour has to be engaged, but this paid labour has to accept the conditions of the children. They more or less live in with the family, but they all know they must get away from these farms, because these farms do not offer them any possibility of establishing a household of their own. It is a well-known difficulty in all peasant districts to get suitable conditions for married agricultural workers who want to stay on the land. From this point of view there may be certain advantages for the agricultural worker in the large-estate system. One may come to similar conclusions—I shall not go into details here—with regard to the questions of wages and hours. Hours on the peasant farms are often very long. The big estate not only can organize hours in a better way, but is obliged to do it. It cannot in the same way look out for the weather, because there is no time to change instructions for the next day. It is more rigid in its labour organization, which presents certain advantages to the workers. With regard to employment, it may be that employment is more stable on the peasant farm because the one man as a labour unit plays a bigger role in comparison with the whole labour staff on the small peasant farm than on the large estate where he is only a fraction of the whole labour staff, and where more changes in the numbers of employed and more use of casual labour may be made. But on the whole, the employment situation in agriculture does depend not exclusively on the real need for labour in agriculture, but also on employment possibilities in other industries, and whether farmers can assure themselves of a supply in times of pressure, or whether they have to keep labour over the whole year in order not to be short when work is pressing. It is on these indications that I would like to submit to you that the question of the best size of farm may, when looked upon from the point of view of the individuals working in agriculture, have another aspect than is usually stressed.

E. LANG, *Königsberg, Prussia.*

Among the many problems of organization which were discussed this morning in such interesting manner, I would like to pick out only one which was also broached by Dr. Warren; the size of the farm holding. I will do so from the special aspect of German conditions.

It seems to me important to make this introduction. The course of the Conference hitherto has very plainly shown that the great economic areas, North America, Great Britain, and Central Europe, to name only a few more closely connected with each other, work

under very divergent economic conditions, and again that the co-operation of the essential factors and their development vary greatly. This fact seems to me to be mainly responsible for the difference of opinion between Professor Ashby and Professor Zörner.

In order to avoid the same danger as Professor Zörner—of being misunderstood—I treat the question of the size of agricultural holdings as I, a German, regard the problem; and I would add that the problems in central and east Europe up to the Russian frontier could, in many respects, be treated from the same angle as in Germany. I must also add that what was said by Dr. Warren this morning can to a considerable extent also be applied in Germany.

The problem of the size of the unit has a special significance in farming. This is mainly because any adjustment of the size to changed conditions, as should take place in an organic development, is confronted by exceptional difficulties. The size of the farm is partly influenced by the factors affecting the form of farming, i.e. the farming system, the most important of which are the natural conditions, market conditions, personality of the operator, and the development of commerce and technique. In varying combinations these factors always give rise to new systems of farming which in their turn change according to changes in the determining factors. As already stated by Johann Heinrich von Thünen, there is no optimal farming system. There is also no size that is optimal under all conditions, because the factors mentioned act in ever-changing combination, and, because of these changes, different size units are always becoming the more efficient. But whereas the adjustment of the system of farming to the prevalent factor is comparatively simply achieved, this does not hold good for the adjustment of the size of the farm. This process is rendered exceptionally difficult by factors other than those mentioned, which also affect the size of the farm. Such factors are: historical influences, customs and practices of forms of inheritance, conceptions of State policy and social policy. This group of factors makes for great rigidity in the size of farms, particularly as the agricultural section of the population tends to respect historical traditions even if they have long since been proved obsolete.

The attainment of the most efficient size on the principle of highest efficiency per unit of land is, therefore, if not impossible, at least extremely difficult. This is apparent if we follow the development of the average size of farms in Germany in the last half-century. Between 1882 and 1933 the average size of the holding over 2 ha. dropped from 13.57 to 12.12 ha. If we only take the holdings over

5 ha., the average size decreased from 21.78 to 17.72 ha. In the same period, the population grew from 84.5 per sq. km. to 140.3. Owing to the comparatively insignificant reduction of the size of holdings just mentioned, the great pressure of population could not be counterbalanced, and for many years there was a strong migration from the agricultural regions, particularly those east of the Elbe, to the industrial centres in the west or overseas. Thus, in the period 1840-1925 the province of eastern Prussia lost more than half its birth-rate surplus through emigration. Here, the alterations in the size of the holdings bear no proportion to the development of the population, but nevertheless they deserve close scrutiny.

An examination of the size groups and of their variations, 1882-1930, as shown in the official German statistics, reveals several features notable for their regularity.

The share of the size groups in the farm land of Germany was, in percentage:

Proportion of Land in each Size Group, Germany, 1882-1933

<i>Size group</i>	1882	1895	1907	1925 ¹	1933 ²
Under 2ha. .	5.8	5.6	5.5	6.3	5.8
2-5 . .	10.0	10.1	10.8	11.4	10.0
5-10 . .	12.2	13.0	14.9	16.3	37.5
10-20 . .	16.5	16.9	18.5	19.5	
20-50 . .	22.5	21.9	22.0	19.8	28.8
50-100 . .	8.6	8.5	7.8	6.6	
100-200 . .	4.8	4.7	4.5	4.8	17.9
Over 200 . .	19.6	19.3	16.0	15.3	

¹ New territory.

² Preliminary figures.

It is to be observed that the size groups 5-10 and 10-20 ha. show an increase at all five official censuses of this period, amounting to a total gain of approximately 9 per cent. of the whole farm land, whilst the large peasant farms of 20-50 and 50-100 ha. gradually lose land to the total extent of 3 per cent. The large farms over 200 ha. lose even more, their loss amounting to almost 6 per cent. On the other hand, the farms of 100-200 ha. have maintained their share, and the same also applies to the small holdings of 2-5 ha. Thus, we note a decided shifting from large estates and big peasant farms to typical peasant family farms. That leads to the question: What are the factors that on the one hand weaken the big farms and larger peasant farms, and on the other strengthen the position of the family farms?

The perception of these changes gives us some hints on the further

development of the size groups, which are important both to science and to practical agrarian policy.

1. An advantage of the peasant family holding of the size of 5-20 ha. is, above all, the incomparably favourable form of labour organization. That applies equally to the quantitative labour capacity as to the personal interest in the results of the work, and also to the adaptability to varying labour requirements in the annual routine of farm work. This means efficiency of the family holding in all types of labour necessitating special care, e.g. cultivation of intensive crops, truck crops, animal husbandry, and animal breeding. In particular, family labour facilitates quicker harvesting of fodder and grain crops, thus avoiding losses in quality and quantity, as compared with big farms. This is especially notable in districts usually suffering from bad weather in harvest time, for instance in eastern Germany. The utilization of the crops, particularly of the fodder crops, the utilization of fodder supplies and of the by-products of the grain and root crops are all better. Then, thanks to their heavier live-stock capacity, which is 50-100 per cent. higher than that of the big farms of the group over 200 ha., these holdings can apply more yard manure per unit of land, an advantage especially important for the yields of the root and fodder crops.

2. A special disadvantage of the larger peasant farms of 20-100 ha. is the fact that they are particularly short of labour. They endeavour to retain as far as possible the advantages of family labour and lack, when compared with the larger farms, the scope for use of labour-saving machinery. In consequence, the larger peasant farms are organized on an extensive system, which is apt to stand in contrast to the trend of national economic development. It is possible that the development of small tractors may strengthen the position of the larger peasant farms.

3. An advantage of the large farms of 100-200 ha. is the fact that the operator of these farms is usually very well trained, that he usually also manages his farm himself, that the extent of hired labour is kept within reasonable limits, and that the unit is large enough to allow of the utilization of almost all types of modern labour-saving equipment suitable for the German types of farming. This size-group includes a particularly large number of efficient farmers.

4. A disadvantage of the very large farms over 200 ha. is the fact that the increased size impedes close supervision and rapid control of all operations, that hired employees and workers preponderate, and that the long distances in the farm make for waste of time and other losses. Wherever the natural conditions allow of, or particularly

favour, grain farming, distillery enterprise, sheep farming, or sugar-beet cultivation, the very large farm can hold its own fairly well. Occasionally, the special efficiency of the entrepreneur and the great capital at his disposal can result in particularly progressive organization and management. In this case, such a farm can give a great incentive to farming in the district.

Within the peasant size groups there are several special factors of management which, under certain circumstances, can very essentially affect the size of the unit. The most important of these factors are the requirements in animal draft power, the supply of labour, and the form of soil utilization (ratio of arable, meadow, and pasture land). Dr. Marckmann has proved that on the heaviest soils, which require for tilling a team of 4 horses, economic results can only be obtained on holdings of 30-40 ha. The need for full utilization of the 4 horses tends to increase the size of the holding up to 50 ha., whereas the advantages of family labour diminish with increasing size of the farm. This is demonstrated by the fact that at a size of 20 ha. 87 per cent. of the permanent labour is supplied by members of the family, and at 45 ha. only 66 per cent. Very often only by means of a compromise between the two factors, utilization of horse power on the one hand and fullest share of family labour on the other hand, will it be possible to decide the most efficient size of the holding. On the same soils, which in Schleswig-Holstein are operated with a proportion of permanent grass of 50 per cent., but in eastern Prussia with only 30 per cent. permanent grass, this factor, in conjunction with the shorter period of growth, leads in eastern Prussia to 4-horse teams on holdings of 25-35 ha. In general, on heavy and very heavy soils, draft power requirements are the deciding factor, whereas on lighter and medium soils the considerations of family labour are decisive.

Furthermore, intensity is an important factor governing the size of the farm. According to Dr. Brock, the 2-horse farm of about 10 ha. is most suitable for fruit, tobacco, and vegetable farming in the best parts of the Vistula lowlands, but for grain and live-stock farming on medium soils 15-25 ha., and on heavy soils a 4-horse holding of 25-30 ha. is the best size of the holding. Under specially unfavourable conditions, holdings with two 4-horse teams and of a size of 40-50 ha. have proved necessary, whereas in the best conditions, allowing of fruit farming, 1-horse holdings of about 4 ha. provide independent agricultural subsistence. In western Germany the size of the independent family holding can be diminished to 1 ha. under the very favourable conditions of the Rhine valley between Cologne and Bonn. Again, in intensive live-stock farming in

Denmark, under favourable conditions, holdings of 7-8 ha. and, under unfavourable conditions, those of 10-12 ha., have proved efficient.

Whereas the larger peasant farms mainly devote themselves to live-stock farming and grazing because of the low labour requirements of those forms of farming, according to a not yet published investigation (of Dr. Bräuning) very different tendencies are also to be found in this size group. Thus the types of farming in the Friedrichskoog on the west coast of Schleswig-Holstein show increasing intensity with increasing size of the peasant holding, which is apparent in the extent of the acreage of root crops and vegetables. The reason for this remarkable exception to the rule is that only the peasant holdings of 30-100 ha. have enough draft power for cultivation of sugar-beet and vegetables on the heavy soils prevailing, although the general physical conditions favour these crops; the smaller peasant holdings of 10-20 ha. have not enough horse power for this system of cropping and grow more fodder crops on the arable land.

We will let this suffice. All the examples prove that, in so far as there is unfettered development of the size of holdings, very various factors can have the deciding influence, and that it is impossible to set up standards even for one district, apart from the general trend of economic development, which also affects the general trend of development of the size of holdings. But apart from that, every one concerned with these problems must be acquainted not only with general economic facts but also with the particular circumstances of farm organization and management, if wrong measures are to be prevented. In densely inhabited west and central Europe the lack of space will probably render these problems increasingly important in the future. It is certain that unlimited and uncontrolled yielding to the pressure of increasing population by diminishing the size of the holdings is not feasible, and that, wherever a diminution seems practicable, it can only be carried out under closest observation of all circumstances. It is certainly a fact, proved by the extensive investigations of Prof. Laur¹ of Zurich, that economic efficiency increases with decreasing size of holding, and that there is an increase in output for market which continues in spite of greater home consumption—according to the studies of Dr. Bräuning²—down to the small peasant group of 5-10 ha. This fact deserves, above all others, particular consideration.

¹ Laur, Concluding address in *Proceedings of the International Conference of Agricultural Economists*, Bad Eilsen, 1934, German edition, Buske, Leipzig, 1934, p. 424; English edition, Oxford University Press, 1935.

² Bräuning, R. 'The efficiency of the settlement farm in comparison with large farms'. *Berichte über Landwirtschaft*, 98. Sonderheft, Berlin, 1934.

J. COKE,¹ *Assistant Commissioner, Economics Branch, Department of Agriculture, Ottawa, Canada.*

The idea of large-scale farming is not new; for nearly three-quarters of a century in North America experiments of this nature have been carried on. The speculative element entered into some of the earlier attempts, but in the majority of cases there existed a strong belief that the principles of large-scale business could be applied in agriculture. With the passage of time, the corporation has been adapted to agricultural production to some extent. In Canada, as elsewhere, the highly specialized products of the soil such as apples, wheat, and tobacco have lent themselves to the evolution of corporate ownership and operation of extensive holdings. There are at least three types of corporate organization which might be discussed in this paper: (1) the corporation which owns and operates its holdings in every respect; (2) the corporation which performs the functions of an entrepreneur in a large measure; (3) the corporation which seeks to perform specific services in production. The first type may be dismissed with brief discussion. This form of farm business organization is the oldest of the three and the least satisfactory, and most of the failures have been in this type of organization. The difficulties of supervision and operation in a farm business due to the area of the unit are too great to make for much success.

The second type is the corporation which limits its field of activity by assuming responsibility for those things which corporate enterprise may accomplish more successfully than the individual or a partnership. Because of the continuity of its existence, a corporation can develop a long-time policy, whereas the individual cannot because of lack of funds, shortness of life, or even lack of vision of potential objectives. Such a type of corporation has been developed in one of the tobacco-producing regions in Canada, and, while its history is short, it will be generally agreed that it has stood the shock of depression rather better than individual ownership. Before dealing with this type of organization, it will be necessary for me to provide some of the background of tobacco production in Canada.

Tobacco has been grown in Canada since very early times. For years the acreage, yields, and prices fluctuated violently, each successive rise in prices bringing in new growers and new land with often a surplus of low grade tobacco, which resulted in sharp declines in prices. The crop is one which requires skill and suitable conditions of soil and climate for its production. There are two areas in Canada

¹ The special title of this address was 'Corporation Farming in Canada.'

in which the crop is grown commercially. The smaller area is in Quebec and is devoted mainly to the production of large and small pipe tobacco and cigar leaf. This area is somewhat widely spread, including parts of the counties of Missisquoi, Iberville, St. Hyacinthe, and Bagot. It is in these regions that the cigar leaf is chiefly produced. The counties of L'Assomption, Montcalm, Berthier, and Joliette on the north shore also produce tobacco, mainly large and small pipe varieties. Production in these districts has varied recently from over 10,000 acres in 1927 and 1928 to 5,425 in 1935.

The chief source of supply is, however, to be found in south-western Ontario. In this section about 3,000 acres were grown in 1900, while in 1935 41,428 acres were grown, yielding 38,500,000 pounds valued at \$10,117,200. It is true that this represented the peak of production. Most of the tobacco grown in south-western Ontario is flue-cured or burley, both being used for cigarette manufacture or smoking mixtures. Most of the burley is now produced in Essex and Kent Counties and most of the flue-cured tobacco is grown in Norfolk County. The development of the industry in this county and the surrounding districts covers approximately a decade. Although not related to the development of flue-cured tobacco production, it should be stated that since 1926 Canadian tobacco, like other Empire tobaccos, has enjoyed a preference of 2s. 0½d. per pound in the United Kingdom market, but our consumption of Canadian grown tobacco in the domestic market has been increasing rapidly and the export market, though of importance, absorbs but a small share of the total output.

This short description of the industry will, I hope, help you to understand what is to follow, but it will also be necessary to outline the growth of tobacco production within Norfolk County. The pioneer in growing flue-cured tobacco was Mr. Grant Fox who, about thirty years ago, produced his first crop at Ruthven in Essex County. From this small beginning, the production of flue-cured tobacco reached 7,550 acres in 1927, of which 5,850 acres were in Essex County. This really marked the high point in Essex for, as we shall see, other developments were under way.

In 1919 H. A. Freeman, who was then connected with the Dominion Department of Agriculture, planted 5 acres of 'flue-cured' near Lynedoch in Norfolk County. This was more or less an experiment and one which proved to be successful, for in 1923 he and a partner, W. L. Pelton, grew 20 acres and subsequently increased the amount to 150 acres. Mr. H. B. Smith, President of the Norfolk Tobacco Plantations Ltd., was another pioneer who began soon after

Freeman's first experiment, and others, including Mr. Fox of Essex County, followed. The 1926 report on tobacco production, published by the Tobacco Division of the Experimental Farm and the Bureau of Statistics, shows that 205 acres of bright flue-cured tobacco were grown in Norfolk County in that year.

The presence of the soil type essential for the production of flue-cured tobacco had already been noted, but no one knew its extent or location. About this time, two Departments of the Ontario Agricultural College began work in the tobacco regions. The Department of Chemistry extended its soil survey; their work indicated a clear relationship between tobacco production and soil type. The Department of Economics undertook an economic study of the organization of tobacco farms and marketing problems. Professor A. Leitch, who was in charge of the latter study, had experience in operating large farms before accepting an appointment as head of the Economics Division. He became interested in flue-cured tobacco. He reckoned that any crop that would return \$175 net per acre, as was shown by his studies, should command attention. Moreover, his technical training led him to 'scout' the new area in Norfolk County and, as a result, he was the first to realize the extent of the soil in that county suitable for growing the crop. He checked on drainage conditions and frost hazards. There was, however, one large fly in the ointment—he had only a little cash. He went, therefore, to a broker friend, J. E. Carter, who was able to supply additional funds sufficient to buy options on desirable farms. The result was that in 1927 and 1928 control of a considerable portion of the flue-cured tobacco lands in the county was secured. The options were sold to small groups which organized companies to grow tobacco on a share-tenant basis. 'The Professor' subsequently became president and general manager of the largest company and president of a smaller concern.

By 1931 eight companies and three large individual operators owned 21,000 acres on which 6,500 acres of tobacco were grown.

The acreage operated in 1931 and 1936 is shown in Table I. It will be observed that expansion has been moderate during the past five years. In this connexion it should be stated that in 1934 a voluntary system of acreage control was introduced, and this factor must not be lost sight of in considering the growth of these companies.

The largest company owns 5,400 acres of land on which 2,017 acres of tobacco are being grown in 1936. The second largest organization has 3,500 acres on which 1,100 acres of tobacco are

being produced this year. Last year the companies produced 21 per cent. of the total production of flue-cured tobacco in Ontario.

The capital structure of the companies for the most part involves issues of preferred and no par value common stock. Generally

TABLE I. *Large-scale Tobacco Plantations, Norfolk County, Ontario, 1931 and 1936¹*

Name of Company	Year organized	1931			1936		
		Total area	Tobacco area	No. of units	Total area	Tobacco area	No. of units
Windham Plantations, Ltd.	1929	5,300	1,860	48	5,400	2,017	49
Lake Erie Tobacco Co., Ltd.	1928	3,100	1,100	33	3,500	1,100	30
Ontario Plantations, Ltd.	1928	1,800	650	18	2,000	550	17
St. Williams Plantations, Ltd.	1929	1,800	500	14	1,800	440	14
Southern Canada Plantations	1930	1,700	425	13	1,850	450	15
Norfolk Plantations, Ltd.	1927	2,000	425	14	2,000	425	14
Vittoria Plantations, Ltd.	1928	1,100	425	8	2,400	512	17
Simcoe Plantations, Ltd.	1931	500	105	3	1,000	260	8
Carolina Plantations, Ltd.	1928	800	240	8	800	245	7
Delhi Plantations, Ltd. .	1928	450	150	4	450	150	4
F. R. Gregory	1926	1,000	300	9	950	325	9
H. A. Freeman	1928	700	240	7	1,100	350	10

¹ These acreages are approximate.

speaking, the capital structure is conservative. The lands were acquired at moderate prices, and there has been very little of the speculative element in the organization of the companies. There has been speculation by individuals.

Some companies are still experimenting with the paid labour system, but generally the advantages of the tenant system are recognized. The tenants are usually either Belgians, Hollanders, or Southerners from the United States. Each nationality has its supporters as regards suitability. The tenant system is an endeavour to preserve the personal interest of the family group and to provide the essential supervision of each unit. Besides the business management, the larger companies also have well-paid farm managers who are skilled in tobacco production.

The tenant holdings usually range from 30 to 40 acres of tobacco, this amount of land along with the greenhouses, kilns, and equipment having been found to be most efficient.

The companies, in entering into agreements with tenants, retain

control of the production policies; that is to say, the tenant agrees to follow the methods prescribed by the companies. A company, therefore, agrees to supply the land, buildings, horses, machinery, and to pay the taxes. The tenant supplies all the labour. This is the general principle upon which leases are drawn. Two companies supply fertilizer to tenants.

The general policy is to develop a rye and tobacco rotation, the rye being disked in when the tobacco has been harvested and all except sufficient to provide seed and bedding is worked under in the following year. The companies provide the seed and assume responsibility for this practice because it is regarded as a capital expenditure.

The companies also assume charge of the curing of the crop because many tenants have no experience in this important phase of the work. The companies pay the transportation of the curers from the Southern States and from farm to farm as well as half of their wages, while the tenant boards the curer and pays half of the wage bill.

The terms of the lease provide that in case the tenant refuses to follow the instructions of the company he may be set aside, the company assuming full charge of his crop for the balance of the season and charging the expenses to the tenant's share of the crop. This is essential to insure a uniform product and is of peculiar significance in the case of partnership tenancies. It is moreover necessary to protect the company's interest not only in the crop but in the equipment as well.

Each tenant is supplied with one horse for each 10 acres of tobacco, and in the majority of cases half the cost of feed, on a basis of \$125 feed cost per annum, is assumed by the company. This arbitrary arrangement prevents possible waste of feed by tenants and ensures that the horses will be well fed. Moreover, the company does tractor work at cost to the tenant. This is done as a means of providing extra power at times when it is required without burdening the tenant or the company with additional horse equipment which would not be fully employed.

Generally speaking, tenants are expected to haul all goods required for growing the crop, but the companies do supply oil and gas where it is required for tractor operation, and haul the building materials. The returns are divided equally between landlord and tenant in every case and the agreements have effect for one year.

The turnover in tenants is considerable for various reasons. Some have become established as owners. Others have been refused renewal of their contracts. A few have terminated their relations with companies for other reasons. One company has adopted a selective

process and now has more than half of its tenants under 30 years of age, and their men have been selected because of ability displayed as hired men or tenant holders. They are ambitious and amenable to suggestion with respect to improved methods of production. Nearly all these men are Southerners. Some companies show relatively little change in tenants.

TABLE II. *Summaries of Profit and Loss Accounts of Three Tobacco Corporations 1928-1935.**

COMPANY A

	<i>Income</i>	<i>Operating expense</i>	<i>Operating profit</i>	<i>Net profit</i>
	\$	\$	\$	\$
1928	38,165.26	20,778.37	17,386.89	6,302.77
1929	30,400.77	19,914.60	10,486.17	1,933.63
1930	51,932.46	27,402.97	24,529.49	10,630.30
1931	48,003.72†	29,304.72	18,699.00	-2,388.34†
1932	45,820.70‡	32,728.93	13,091.77	-1,717.59†
1933	38,986.32	23,954.59	15,051.73	45.48
1934	52,967.77	27,233.84	25,733.93	9,265.02
1935	62,794.13	35,627.86	27,166.27	11,048.98

COMPANY B

<i>Crop year</i>	<i>Income</i>	<i>Expenses</i>	<i>Operating profit</i>	<i>Net profit</i>
	\$	\$	\$	\$
1929	50,250.19	21,913.80	28,336.39	16,299.69
1930	60,225.70	24,790.25	35,435.45	17,389.37
1931	53,766.73‡	28,040.58	25,726.15	7,599.29
1932	46,233.86‡	24,987.26	21,246.60	2,606.62
1933	38,142.59	27,295.86	10,846.73	-2,168.85†
1934	56,697.60	26,581.49	30,116.11	14,687.01
1935	66,747.25	26,659.52	40,087.73	22,973.34

COMPANY C

<i>Crop year</i>	<i>Income</i>	<i>Expenses</i>	<i>Operating profit</i>	<i>Net profit</i>
	\$	\$	\$	\$
1929	132,679.52	46,967.49	85,712.03	56,349.59
1930	187,805.51	80,333.46	107,472.05	65,993.06
1931	230,444.19‡	97,921.84	132,522.35	74,710.27
1932	171,296.95‡	95,211.19	76,085.76	10,840.02
1933	169,192.45	98,023.25	71,169.20	841.72
1934	177,660.33	94,488.94	83,171.39	37,963.60
1935	276,422.98	113,026.86	163,396.12	105,304.03

* Based upon annual reports of subsequent years.

† Loss.

‡ Less marketing costs.

The companies have all withstood the depression. In some years the profits were low and in one year most of them lost money. Only one has shown net profits consistently. Dividends on preferred stock have been fairly well maintained though some are in arrears. The dividend position of the companies is not a clear indication of their financial position. Reserves of a substantial character have been set up to cover depreciation, and in general mortgage indebtedness has been reduced and the properties improved. There are, of course, exceptions where unsatisfactory tenants have been secured. In general, the attitude has been that the first duty of the directors is to protect the equity of the shareholder. The years of low profits or loss were due first to an effort to develop an export business in which losses in exchange were pronounced and secondly to very low prices for tobacco.

Most of the usual advantages claimed for large-scale operation may be presented in support of these corporations, though one must understand that they have accrued in the several companies in varying degrees. Among the more important which may safely be referred to is the factor of adequate financial resources. This is particularly important in the production of a crop such as tobacco which is a high cost and high value product. The purchase of the crop is in the hands of six or eight companies. Therefore, skill in the technique of production must be coupled with efficient business management. It may be fairly claimed that the companies have followed progressive policies of production and have been responsible for the introduction of priming, use of proper fertilizers, and rotation of crops. In the initial stages of development, some companies saved as much as \$3 to \$4 per ton in the purchase of fertilizers, and in the construction of kilns were able to effect savings in materials and construction of as much as \$90 per kiln. They take advantage of cash discounts and in the purchase of equipment generally effect economies. A well-financed organization can also supply equipment quickly, as, for example, one company which found that certain tenants were having difficulty with sprayers had four new sprayers at work the following day. The tenants individually could not have secured this equipment so readily, and as a result would have lost at least part of the crop. The purchase of equipment can and is minimized in that expensive equipment, such as tractors, can be used on a large number of units, and the tenant is charged for the work that is done for him. He has no investment in expensive equipment which might be required for only a short period of the year. It should be recognized that once a system of production is established there will be some hesitancy on the part

of the management of a corporation to introduce innovations because they must be adopted on all units and, if the experiment did not work well, considerable loss would be experienced. The individual owner operator is not under such a handicap in this regard. Generally speaking, I think it will be agreed that a high degree of technical skill is being utilized by the companies, but the necessity for caution in respect to new methods is not to be overlooked. It should, moreover, be said that the majority of the better crops are produced under company supervision and the production of a large volume of the product under standardized methods usually results in a more uniform quality of product.

It is in the selling phase that corporate management has made its greatest contribution. Here business experience has been effective. The growers with their diverse views and weak financial position were never able to bargain effectively for the sale of the product, but three or four representatives of the companies were able to match wits with the buyers. In 1931 steps were taken to develop the export trade in the United Kingdom. This would have been a long-drawn-out process and might not have been accomplished at all under individual ownership and operation. This export outlet was essential as a safety valve in case the regular buyers were not willing to pay prices deemed adequate by growers. It cost the companies considerable money to do this, and it has been accomplished for the benefit of the companies it is true, but the private grower benefits as well. Moreover, the strong financial position of the majority of the companies has permitted them to avoid distress selling. The companies have a more uniform and a higher quality of tobacco in the majority of cases, and they have been able to secure better than average prices for their products. The companies took a leading part in the Price Spreads Committee investigation, conducted by a committee of the Canadian House of Commons, and in the establishment of the Ontario Flue-Cured Tobacco Marketing Board, until the Natural Products Marketing Act was declared *ultra vires*. The companies have since been active in assisting in developing a voluntary agreement between buyers and growers which permits most of the advantages of the Marketing Act or, at any rate, is expected to do so. The foregoing will serve to show that the companies, economically speaking, have been able to weather the financial storm for eight years and to make progress towards firmer financial ground.

Opinion regarding their operations is not unanimous, as one would suspect. The development of the tobacco business has brought about an influx of population of varied nationalities and

ideals. The old United Empire Loyalist families view the tobacco crop and the tenants with disdain. In some measure the problem of absentee ownership is present, that is, the head offices of some of the companies are outside the county. This is not serious because the management has close contact with the tenant operators. The development of the tobacco business, at large, has brought an influx of unemployed at certain seasons of the year, and this has added to the social burdens of the municipality, but this is not to be laid at the door of the companies. One company has provided hydro-electric power on a large percentage of its farms. The homes are equipped with electric washing-machines, stoves, and lights. This company has held several meetings among its tenants at which a banquet has been provided and technical discussions of tobacco production have been carried on. This company last year, as a gesture of goodwill, sent each tenant a Christmas cake. So far as I know, such activities have been indulged in by only one company, but the possibility is clear. The manager of this company told me: 'We want our tenants to be satisfied and to make as much money as possible because the more they make for themselves the more they make for us.' It is my opinion that several of the companies have the long range point of view and the interests of the community at heart. The possibility of the other view is not to be overlooked, and I am not holding this one company up as an example of the usual practice, but it can be said that conditions in this area as regards the tenants are fairly satisfactory.

I would like to emphasize the fact that substantial numbers of labourers have become tenants and numbers of tenants have become owners. At the same time, the area of land suitable for tobacco production is rather definitely limited, and the essential climatic conditions are also limited. Thus, it may be that as time goes on, the opportunities for the labourer to ascend the agricultural ladder may become more limited. The number of companies is not likely to be enlarged greatly because most of the tobacco land is now under control. In my judgement, the development of the corporation farm organized on a share-tenant basis is likely to find its highest development in those types of farming in which the single enterprise contributes most of the revenue.

The experience of these corporate farms has been short and, in the absence of a complete analysis of data on their operations, one must refrain from a definite appraisal of their accomplishments, but it may be said that the necessity of providing large amounts of capital for land, buildings, and equipment, the high operating expenses

involved in the production of tobacco, the skill required to raise the crop, and the efficiency essential to satisfactory sales, all indicate the desirability of a division of responsibility between landlord and tenant. It may also be suggested that a company operating on a large scale may prove to be a more efficient landlord than a number of individuals attempting to perform that service. So long as the companies deal fairly with tenants and select good citizens as tenants, there is little likelihood of a corporate landlord being undesirable. Moreover in the matter of sales the tenant and the landlord have a common interest, and any tendency to take unfair advantage of tenants is thus minimized.

The third type of corporation is represented by the operations of the Colonization Finance Corporation of Canada, Ltd., which offers another example of corporate supervision of groups of farms. This company operates in the three Prairie Provinces. It came into existence through the co-operation of nine loaning companies and the Canadian Pacific Railway—each of the companies had experienced difficulties in securing repayment of loans made to farmers. This company was, therefore, organized with a twofold objective: (1) to assist the loaning companies to salvage their loans, and (2) to assist the creditors in salvaging their farms. In 1931, 72.3 per cent. of the farms were foreclosures which had taken place over a period of years prior to 1930. They could not expect tenants to maintain the properties because of lack of security of tenure, but with a proper system of farm management this was not true. The operators of these farms were in much the same position as a tenant. Their equity was small or in some cases had entirely disappeared. The company, therefore, was brought into existence to provide assistance which would be of mutual benefit to the operator and the creditors. Briefly the plan is to zone the areas in the provinces in which the member companies have their loans and provide a supervisor for each zone. In Manitoba there are 8 zones and in Saskatchewan 6 zones. Fewer farms are under supervision in Alberta, and I think these are handled in connexion with the Saskatchewan zones. A total of 3,220 farms are under supervision this year. A competent farm manager supervises the work of the zone district representatives.¹ In developing a system of management a crop map of the farm is provided as the first step in reorganization. The second step is to take an inventory of equipment, live stock, land, and buildings. The taking of the

¹ For a full discussion of this project, see F. W. Reinoehl, 'Farm Management Programme of the Colonization Finance Corporation', *Scientific Agriculture*, vol. xiii, no. 8, April 1933, pp. 481-8.

inventory is followed by the establishment of a set of accounts which are basic to proper budgeting. Annual crop reports are also required. These are summarized and made available to the farmers for comparisons. These accounts, of course, are useful in deciding additional amounts of credit for operating purposes.

Improved methods of crop production and weed control have been introduced. Portable seed-cleaning equipment has been provided in some zones, improved cultural practices adopted, and similar improvements in live-stock production introduced on a commercial basis.

The cost of the service in 1931 was estimated at 20 cents per acre which is almost entirely met by the interested company. My belief is that such costs have been reduced in subsequent years by means of an increase in the number of properties supervised and consequent improvements in the system of zoning so as to reduce the cost of supervision.

There is a degree of similarity in the two types of corporate organization discussed thus far. I believe that both hold possibilities for development. The principles involved in the operation of the plan adopted by the Colonization Finance Corporation may be applicable on farms which are operated by farmers whose equity is unimpaired or very slightly depreciated.

Besides these examples of corporate enterprise in agriculture in Canada, we have a number of chain or multiple farms controlled by single individuals. This is true in the apple districts of the Annapolis valley, Nova Scotia, and in the St. John valley of New Brunswick where potatoes are the main cash crop. I have already implied, however, that I do not expect to witness a marked change from the family size farm to the corporate form of ownership, though there may be some increase.

Besides these commercial undertakings, we have in Canada several examples of group farming such as that carried on by Doukhobors in British Columbia, the Hutterites in Manitoba, and the Bangor Community in Prince Edward Island. In these enterprises, a national and religious motive is characteristic and even of paramount importance, so that this type of organization is not as highly developed commercially as the tobacco and grain farms, and really has no place in this discussion.

In conclusion, I would say that Canadian experience with the corporate form of farm ownership and operation has been limited to rather highly specialized types of farming. Those which appear to have been most successful have possessed more adequate capital, greater efficiency in business management, and a higher degree of

technical skill than would be found on the average among the individual producers who would be necessary to operate a similar area of land, but not a little of their success has been based upon the preservation of the intangible but essential quality of successful operation found in the family farm—the personal interest and pride of attainment possessed by the family head on each unit of the corporation's land.

F. BUČEK,¹ *Institute of Farm Management and Accounting, Prague, Czechoslovakia.*

Agricultural production in Czechoslovakia is managed on the principles of private enterprise on the individual farms, the total of which amounts to 1,641,309, operating an area of 8,475,710 ha. (excluding forest land). That is to say, the average is 5.2 ha. per agricultural holding (arable land, meadows, garden-land, pastures, and vineyards). The farm is, as a rule, the property of the operator. Rented farms comprise only approximately 1 per cent. of the total area, which mainly includes large farms. Part-rent is more frequent; here, the main area of the farm is the property of the farmer and only a certain additional acreage of fields (or meadows) is rented. This form of rented land accounts for about 10 per cent. of the agricultural area.

Only a few large farms are managed on the corporation system, and there are no State-owned farms. The State mainly administers the forests, but only to an insignificant extent the agricultural land.

According to the agricultural census of the year 1930 the distribution of farms in the size groups was as follows:

TABLE I. *Size of Farms in Czechoslovakia, 1930*

Size group	Number of farms		Area	
	Number	Per cent.	Acres	Per cent.
0-2 ha.	753,542	45.9	647,406	7.6
2-5 ha.	444,099	27.1	1,587,952	18.8
5-20 ha.	391,926	23.9	3,943,102	46.5
20-100 ha.	46,667	2.8	1,448,652	17.1
Over 100 ha.	5,075	0.3	848,598	10.0
	1,641,309	100.0	8,475,710	100.0

In Czechoslovakia farms of all size groups are to be found, but the great mass of farms belong to the small and medium-size groups,

¹ The special title of this address was 'The Organization of Farming in Czechoslovakia'.

i.e. up to 20 ha., which comprise 97 per cent. of all agricultural holdings and which operate 73 per cent. of the total farm land.

The land reform carried out subsequent to the establishment of the new State did not materially change the distribution of farms in the size groups, because the land reform mainly affected the forms of land tenure. By means of the land reform, the area occupied by the largest size group (over 100 ha.) was reduced by about 500,000 ha., whereas, on the other hand, the groups of small and medium-sized farms showed an increase, with the exception of the group under 2 ha. This group decreased because many holdings previously in this group received additional land and thus came into the 2-5 ha. group. The structure of agricultural production was in no way disturbed by the land reform, either in its economic or in its social aspects. The drawbacks of the distribution of land before the reform were not so much an abnormally large share of the large farms in comparison to other countries, but rather the fact that fully 60 per cent. of the size group over 100 ha. belonged to great estates, i.e. properties with an area of more than 1,000 ha. The great estates had not grown up by free competition for the soil, but were the result of the political system of former centuries; two-thirds of the great estates belonged to the nobility, the Church, and the State, i.e. to those sections of the community which had held political power in the past. There was a particularly great accumulation of landownership after the loss of political independence, for, after the battle of the White Mountain (1620), the estates of more than 500 Bohemian nobles were confiscated and added to the property of the nobles of the opposing political camp. Not these historical facts, however, but economic, social, and political reasons working against ownership of great estates were the immediate causes of the land reform; the land reform was a means of checking the revolutionary tendencies of the period of reorganization and of satisfying the so-called 'craving for land'. The land reform has by no means done away with large farm ownership. The previous owners were left much more than the legal maximum of 250 ha. for reasons such as the preservation and maintenance of buildings of historical and artistic value, of parks, &c. The land reform was carried out organically, without undue haste, and on a legal basis. The former owners were given compensation.

The land reform is an economic gain for the State, for it has caused an increased output of all live-stock produce and has thus materially relieved the trade budget at those points where there was formerly the greatest deficiency (pigs, fats). Furthermore, the land reform

strengthened the farming element which, thanks to its sane conservative character, forms the social backbone of the community. This fact was of special importance, because so high a proportion of the industries and of the industrially employed population of the former Austro-Hungarian State was located in Czechoslovakia. Because the number of persons occupied on a unit of land is three times as high on small peasant holdings as on large farms, the expansion of small and medium-sized peasant farms notably increases the home market for industrial products. This effect of the land reform is particularly important for Czechoslovakia, as owing to its continental position it is dependent on exports for the main part of its industrial production. The land reform thus fulfilled its mission of economic and social consolidation of the State and greatly improved the political situation which threatened to become perilous because of the sudden changes of structure.

By organization of agricultural production we mean the choice of the most suitable form of production, the fixing of the volume of production, and, furthermore, the selection of the most favourable means of production and the intensity of their application. Besides the natural conditions (climate, altitude, soil) which characterize the individual natural regions of production,¹ the size of the farm also exercises an important influence on the organization of agricultural production.²

A very important feature of organization is the proportional distribution of the various forms of soil utilization:

TABLE II. *Land Utilization on Farms in Czechoslovakia*

Type of soil utilization	Size group					Average for the whole country
	0-2 ha.	2-5 ha.	5-20 ha.	20-100 ha.	over 100 ha.	
Arable land . . .	72.0	71.5	70.5	69.5	64.3	70.0
Meadows . . .	16.6	16.1	15.5	14.4	14.6	15.4
Garden land . . .	2.4	1.2	0.9	0.8	0.8	1.1
Vineyards . . .	0.6	0.3	0.2	0.1	0.1	0.2
Rough grazing . .	8.3	10.9	12.8	15.1	19.8	13.2
	100	100	100	100	100	100

¹ In Czechoslovakia, according to natural conditions, we distinguish 4 main regions of production: 1. The sugar-beet area. 2. The grain area. 3. The grain and potato area. 4. The fodder crop area. In this sequence, altitude above sea-level increases, the natural conditions of production deteriorate, and the intensity of land operation declines.

² All statistics in the tables which follow are derived from the survey embracing 3,200 farms, carried out by the Agric. Institute of Farm Management and Accounting of the CSR, Director, Dr. Vlad. Brdlik. The data represent the average of the 5 years 1926-30.

The smaller farms show a higher percentage of the intensive forms of soil utilization (arable land, garden land, and vineyards), whereas the large farms have a greater proportion of rough grazing.

The form of utilization of arable land is also a decisive factor in the organization of agricultural production. The choice of crops is primarily influenced by soil and climate, but is also affected to a significant degree by the size of the holding.

TABLE III. *Crop Acreage in Percentage of Arable Land*

Crop	Size group					Average of the whole country
	0-2 ha.	2-5 ha.	5-20 ha.	20-100 ha.	Over 100 ha.	
Wheat . . .	13.5	14.6	14.9	15.9	22.1	15.6
Rye . . .	20.0	20.0	17.8	15.3	9.6	17.2
Barley . . .	13.4	12.3	12.1	12.8	15.1	12.6
Oats . . .	8.8	11.5	15.5	13.9	8.2	13.3
Potatoes . . .	17.8	12.9	9.4	7.4	7.0	10.2
Sugar-beet . . .	3.3	4.0	3.6	6.6	9.0	4.6
Vegetables . . .	0.6	0.5	0.4	0.2	0.1	0.4
Industrial crops . . .	0.5	0.5	0.7	1.4	2.2	0.8
Fodder crop . . .	14.4	16.3	18.6	19.2	17.9	17.9
Fallow, &c. . .	0.3	1.2	1.7	2.2	3.4	1.7

In the small farms the tendency to provide for self-subsistence and work for all members of the family predominates. The factor of absolute profitableness of each crop is not given much consideration, but the factor of relative profitableness, i.e. income, is important. With increasing size of farm, the acreage of wheat increases and that of rye and potatoes drops, and, whilst the acreage of sugar-beet expands, the cultivation of vegetables diminishes; industrial crops are developed and the acreage of fodder crops also increases (with the exception of the size group over 100 ha.). These facts reveal the principles of household production in the small farms and of market production in the large ones. Favourable natural conditions are more efficiently exploited by the large farm than by the small peasant holdings which, for reasons of household requirements and utilization of a high supply of labour, continue to grow crops (rye, oats, potatoes) which might be replaced by more profitable ones.

Crop production is supplemented by live-stock production, the volume of which depends on the number of live-stock held. This again is dependent on the amount of home-grown fodder produced. The number of draught animals (horses and draught oxen) increases up to the group of 5-20 ha. and then remains practically stationary in

the groups of 20-100 ha. and over 100 ha. On the small peasant holdings the cows are used as draught animals; that is an important fact for these farms. The use of cows as draught animals enables the small farmer to till his land with draught power of his own and, at the same

TABLE IV. *Total Live-stock in kg. per ha.*

<i>Type of live-stock</i>	<i>Size group</i>					<i>Average of the whole country</i>
	<i>0-2 ha.</i>	<i>2-5 ha.</i>	<i>5-20 ha</i>	<i>20-100 ha.</i>	<i>Over 100 ha.</i>	
Horses . . .	19.5	24.6	57.7	48.7	36.1	45.0
Cattle:						
Draught oxen .	6.3	14.0	19.2	17.5	31.3	18.1
Cows . . .	315.7	238.8	145.2	118.7	100.4	167.0
Cattle for fattening .	1.3	1.1	5.7	15.7	20.6	7.6
Stores . . .	46.0	53.9	51.0	42.3	26.9	47.3
Cattle. Total . .	371.6	310.6	228.4	205.3	185.1	246.6
Pigs . . .	43.6	29.3	25.9	22.5	16.8	26.4
Sheep . . .	0.8	1.8	2.5	3.7	6.8	2.8
Goats . . .	9.1	1.6	0.5	0.2	0.0	1.3
Poultry . . .	9.7	6.2	4.0	2.2	0.5	4.1
Total	455.9	374.9	319.3	282.7	245.3	326.7

time, to produce milk. There is a marked drop, therefore, in the number of cows with increasing size of the farms, and, simultaneously, a decrease in the total number of cattle.

The pig enterprise is most developed on the small farms and diminishes with increasing size of the farm; this also applies to poultry and goats; the opposite is the case with regard to sheep. As compared with pre-War times, there is a remarkable reduction of cattle for fattening on the large farms (from 50 to 20 kg. per ha.) but, on the other hand, an increase in pigs (from 3.8 to 16.8 kg.), of horses (from 18 to 36 kg.), and of cows (from 65 to 100 kg.). This is a consequence of the fact that the large farms have replaced draught oxen by horses and tractors, whereby more fodder is available for cows. The reduction of draught oxen also entails a reduction in cattle for fattening, as it was the practice on large farms to fatten the oxen.

The profitableness of small holdings is to a great extent conditional upon the use of cows for draught. This type of draught power adapts itself readily to the seasonal fluctuations of draught requirements. When the cows are not used for draught, the productive capacity of the food can to a greater extent be utilized for milk production. This means that there is always an economic equivalent for the feed. No

other kind of draught animal shows similar advantages. But wherever heavy clay soils limit the use of cows for draught purposes, the basis of small peasant holdings is endangered. Draught animals naturally curtail the supplies of fodder available for productive livestock. The less the number of draught animals carried per unit of land the greater the surplus of fodder, or the greater the acreage that can be devoted to the production of market crops. The remarkable number of pigs in the small size groups is directly connected with the great number of cows kept and with the higher number of persons per unit of land; in small holdings there is enough home keep for pigs in the form of skimmed milk and household refuse (potatoes).

A summary of the days of work annually performed gives us the best survey of the labour conditions:

TABLE V. *Labour Performed on Farms*

Size group	Members of family		Hired labour		Total days
	Days	Per cent.	Days	Per cent.	
0-2 ha.	205	97.3	6	2.7	211
2-5 ha.	151	94.7	9	5.3	160
5-20 ha.	80	75.2	26	24.8	106
20-100 ha.	21	30.0	49	70.0	70
Over 100 ha.	2	3.5	60	96.5	62

It may be said that in the smallest group of 2-5 ha. about treble the amount of labour on the average is needed per ha. than in the size groups of 20-100 ha. and over 100 ha. That, however, does not mean that the effect of labour is three times as high in the smallest groups as in the large groups; it is simply a consequence of the fact that a surplus of the labour force of the family is at the disposal of the small farms, and that therefore it is sought to find means of employing the members of the family. The output per unit of work is disregarded, and only the result of the work of the family as a whole in the course of the whole year is taken into account. This clearly shows up the important social role of the small holding, especially in times of economic stress; for the small farms can serve as refuge to three times as many people as the same area operated in large farms.

The peasant homestead is to the farmer primarily a family enterprise, a means of utilizing his working capacity, and, only as a secondary condition, a source of money income.

The following survey (Table VI) shows that with decreasing size of the farm the number of male members of the family permanently

employed in agriculture diminishes, whereas the proportion of female labour increases. This proves that on small holdings the men seek occupation elsewhere, because the agricultural enterprise is not sufficient in size to provide work for the whole family. With increasing size of the holding it is no longer necessary to seek subsidiary labour income and the farm becomes self-sufficient. The

TABLE VI. *Labour per 100 ha. of Farm Land*

Type of worker	Size group					Average of the whole country
	0-2 ha.	2-5 ha.	5-20 ha.	20-100 ha.	Over 100 ha.	
1. MEMBERS OF THE FARMER'S FAMILY:						
Adults	199.5	86.2	35.1	9.4	1.5	49.6
Children	84.8	35.9	14.2	3.1	0.4	20.5
<i>Employed in agriculture:</i>						
(a) Permanently:						
Men	17.7	24.1	14.1	3.9	0.6	13.2
Women	53.3	30.8	13.8	3.4	0.2	16.9
(b) Temporarily:						
Men	61.5	13.8	2.2	0.5	0.1	8.4
Women	31.6	7.9	2.0	0.6	0.1	5.0
Children	2.1	3.1	1.4	0.2	0.0	1.4
2. HIRED WORKERS:						
(a) Permanent:						
Employees . . . .	..	..	..	0.3	1.5	0.2
Labourer families . . . .	..	..	0.1	3.6	6.6	1.3
Unmarried workers:						
male	0.6	0.4	3.1	2.6	0.1	2.0
female	0.2	1.2	3.2	3.0	0.4	2.3
(b) Temporarily employed:						
Days of work:						
Male	76	89	202	534	1,225	327
female	244	264	461	1,323	2,175	722
Piece-work wages paid:						
Kč. . . .	100	300	800	3,600	4,800	1,500

close connexion between farm work and wage work in the industries offers great advantages, particularly in critical times. The general tendency is towards more general recognition of this fact.

The decrease in labour requirements with increasing size of the farms is a result of the more efficient utilization of manual labour on larger areas, as well as the replacement of manual labour by use of machinery. With increasing size of the farm, the family enterprise disappears, together with all its advantages, particularly with regard to the high quality of family labour. The income loses the nature of a labour income and acquires the character of capital income.

The diverging character of labour in small and large farms leads to differing tendencies in organization and therefore to a different economic type of each size group, thus resulting in very various economic and social values of the different types of farms.

Concerning the various capital investments per ha. of farmland, details will be found in the following tabulation :

TABLE VII. *Agricultural Capital Investments per ha. in Kč.*

Type of capital	Size groups					Average of the whole country
	0-2 ha.	2-5 ha.	5-20 ha.	20-100 ha.	Over 100 ha.	
Land	9,991	9,537	9,245	9,547	9,545	9,438
Improvements . . .	101	130	200	288	214	195
Buildings	13,891	8,434	5,414	4,486	2,939	6,232
Fruit trees	290	214	111	118	115	165
Live-stock	2,104	1,801	1,623	1,484	1,185	1,627
Machines, Implements .	920	1,065	1,050	1,049	1,054	1,043
Field inventory . .	110	105	99	103	129	105
Supplies	1,459	1,159	1,037	1,040	939	1,083
Cash	77	69	85	119	88	87
Total	28,943	22,514	18,904	18,234	16,208	19,975

With increasing size of the farm, the capital investment per unit of land decreases. This particularly applies to the items of buildings, live-stock, supplies, and fruit trees, whilst the land capital, although, in fact, highest on the smallest farms, only shows minor variation.

The greater outlay of the small farms for buildings is caused by the larger requirements for the dwelling, by the greater amount of live-stock, and by the well-known fact that the costs of building are relatively the greater, the smaller the size of the building. Because of the higher investment in buildings, the smaller farms are also more heavily burdened with expenses for upkeep, amortisation, and insurance of buildings.

Capital investments for machines do not diminish with increasing size of the holding because the larger farms can use machines for which there is no scope on small farms.

The outlay on fertilizers and feeding stuffs in the different size groups is shown in Table VIII. The smallest amount of concentrates is bought in the group of medium-sized farms from 5-20 ha.; purchases are highest in the large farms, and then in the smallest holdings under 2 ha. In the case of the large farms, this is due to lack of home-grown concentrates (grain is sold); amongst the small farmers it is a result of the great amount of live-stock carried and

is also due to the tendency to obtain the highest possible output from the live-stock enterprise.

TABLE VIII. *Purchase of Concentrates and Artificial Fertilizers per ha. of Farm Land in kg.*

Commodity	Size group					Average for the whole country
	0-2 ha.	2-5 ha.	5-20 ha.	20-100 ha.	Over 100 ha.	
<i>Concentrates:</i>						
Bran	128	70	45	71	137	70
Maize	50	25	16	27	77	28
Oil cakes	6	7	10	25	46	15
Distillers' draff	2	3	3	5	12	4
Molasses	3	5	8	25	26	11
Sundry	29	8	12	25	39	17
<i>Artificial fertilizers:</i>						
Nitrates	22	25	23	38	49	29
Phosphates	58	62	64	78	105	69
Potash	13	22	19	29	40	23
Lime	54	55	63	99	133	74

The use of artificial fertilizers grows with increasing size of the farms. This is to be explained by the better professional training of the operator as well as by the reduced output of yard manure owing to the lesser amount of live-stock carried.

TABLE IX. *Production and Income per ha. of Farm Land in Kč.*

	Size groups					Average of the whole country
	0-2 ha.	2-5 ha.	5-20 ha.	20-100 ha.	Over 100 ha.	
<i>Production</i>	4,712	3,687	2,986	3,081	3,209	3,288
Plant production	30.3%	36.1%	42.3%	53.2%	56.2%	42.7%
Live-stock production	69.7%	63.9%	57.7%	45.9%	34.8%	56.3%
Industrial production . . . .	..	..	..	0.9%	9.0%	1.0%
<i>Of the production:</i>						
Used in household	55.8%	40.7%	27.9%	11.5%	1.8%	28.5%
Marketed	43.1%	57.1%	68.8%	82.4%	86.5%	67.4%
<i>Income of the entrepreneur:..</i>	2,675	2,268	1,557	988	557	1,572
Labour income	2,008	1,619	1,005	364	68	996
Capital income	667	649	552	624	489	576
Income of hired workers	101	143	434	825	1,084	484

The national importance of the various size groups lies in the value of production per unit of land. The efficiency from the point of view of the individual is expressed in the amount of income.

From the national point of view, the two smallest groups are the

most important, for they show the greatest output per unit of land. The smallest group of holdings is particularly remarkable as it surpasses the next group by about one-third. Among the other groups, the large farms have the highest production, then follows the group of larger peasant farms (20-100 ha.), and finally, the group of medium-sized peasant farms (5-20 ha.) which is of the least national importance. The differences between these three groups are, however, not sufficiently large (4-7 per cent.) to warrant the assertion that one group or another is more efficient from a national viewpoint. But the higher value of the first two groups is beyond all doubt. The summary also displays the superiority of the small farms as compared with the large farms in live-stock production, and equally the significance of the large farms for supplying the non-agricultural population.

From the point of view of the private entrepreneur, the size of income per ha. drops from the small farms to the large ones. In the income of the small farmer, labour income is preponderant, and in the income of the large farmer, capital income.

The income of hired workers is naturally greater in the larger size groups, but, if we add together the labour income per ha. of the entrepreneur and of the hired workers, the small holding is superior to the large farm.

In summary: Agricultural production in Czechoslovakia is organized on the basis of private enterprise and is conducted on farms of various sizes. The majority of the farming community are farmers of the small and medium-sized groups operating almost 75 per cent. of the farmland. Large farms (over 100 ha.) claim 10 per cent. of the land (16 per cent. before the land reform). The relationship between the different size groups is the result of a prolonged economic, social, and political development and is continually changing according to the necessities of actual life. At certain periods every size group is economically and socially necessary and justified, and can claim importance from the point of view both of national economy and of social value and private enterprise. It would seem as if the trend is towards a development of the small and medium-sized peasant holdings at the expense of the large farms, and that such a development is to be welcomed as the most efficient means of solving the industrial crisis, particularly in Czechoslovakia.

A. B. LEWIS, *University of Nanking, China.*

I only presume to speak because I am afraid that some other much better qualified person among you is not going to give voice to these

remarks. Coming from China towards the United States I am of course feverishly interested in what I am going to find there when I land. One of the severest shocks which I have so far received was that administered by Dr. Tolley when he described the newest attempt to regulate agricultural production in the United States. I refer especially to the machinery of administration of the new Soil Conservation Act.

In our agricultural improvement work in the United States we have the State agricultural colleges and, associated with them, agricultural experiment stations and agricultural extension services. The function of these three institutions is research and education, and it is with great difficulty that this limitation of function has been maintained over the period of years since their formation. It has been with great difficulty that political influences have been kept from dominating them. Their purely educational character is the basis upon which the great respect in which they are held by the farmers has been built.

Now, under this present Act we find that the county agricultural agent who is appointed partly by these educational institutions is given charge of determining amounts of money which are to be paid to individual farmers. From an administrative point of view I cannot imagine any greater catastrophe which could have befallen agricultural education in the United States than this. On this basis alone, if not on any other, I hope that this Act, like the preceding one, will soon be improved or abolished.

One other point which should be made is that in general, and I think regrettably, most economists do not yet approach their subject from a scientific point of view or by scientific methods. Most conclusions upon which political action of an economic character is based have been derived, not by statistical analysis of facts or by very difficult reasoning on the basis of these facts, but rather by premisses which have been established on unbased theoretical thinking. It is by people using this latter method that the A.A.A. and substitute measures have been devised. Many of us in agricultural economics do not have confidence in the type of economist who has been given control of such a vital and vast function as the production of food and clothing materials on the farms of the United States. We do not have confidence that they have the omniscient power to regulate the proper relations between supply and demand, least of all in the different highly complex situations for the many commodities produced in the United States.

I wish to make just one particular point under this last heading.

The general idea upon which the regulation of production is based is that the reason for the crisis, as it is called in this part of the world, was over-production of commodities or, as is sometimes said, the lack of adjustment between the supply of commodities and the demand for them. This has been disproven many times over by Professor Warren and by many others who have worked in similar fields, in showing that the principal cause of the decline in prices was not any unusual high production, but monetary changes. I happen to have lived for three years in a country which has undergone a severe economic depression although the level of consumption is below what would be considered a depression level in most western countries. The fall in prices which caused the depression was not due to over-production. It was caused by a rise in the value of the currency. This is the only factor which could have caused a fall in prices in China.

On approaching the United States I regret to find that unscientific economists who are mistaken in the fundamental premiss upon which they operate are engaged in regulating agricultural production.

H. ZÖRNER, *University of Berlin, Germany.*

I would like to reply to the remarks of Mr. Ashby this morning, but first of all may I say one thing. Mr. Ashby concluded by saying that he presumes my statements spring not so much from my belief in the peasant system as from my fear of the collective. I think, when we deal with such intricate subjects as those we are discussing here, the first premiss should be that we do not deny to each other bona fides. I am sure that Mr. Ashby believes what he says and it would be fair, I think, for him to believe the same of me. It would make things easier and it would at least free divergencies of opinion from personal asperities.

Now to his remarks: Mr. Ashby says that I have stressed a conflict between agriculture and industry. I am not conscious of having spoken of a conflict between industry and agriculture. True, in my opinion, there is a very fundamental difference in the conditions of production between industry and agriculture, a difference of such fundamental character that the systems which can and must be developed in agriculture and industry must be different. That however is not a conflict, but a difference. This difference also is often not acknowledged and was, in a private conversation this afternoon, again denied. I would like therefore to go into this matter.

In agriculture we have to deal with the production of organisms. The whole process of production is organic. We have to take account

of Nature, of space; we have the annual cycle of plant growth, &c. All these facts make for quite different considerations of the size of the productive enterprise than in industries where these limits do not exist. Therefore, we cannot approach the organization problems of agricultural enterprise with conceptions gained in industry. We have witnessed such attempts. In Russia these conceptions were consciously adopted to organize agriculture in the same way as industry, because these differences in the conditions of production were consciously refuted. The result was catastrophic. I speak here from my own experience. I personally have followed these matters and have witnessed them at succeeding stages. One cannot say that these affairs were taken in hand in Russia by incompetent men or idiots. On the contrary, in theory they were evolved with the closest reasoning down to the last detail, but they rejected the difference of basic conditions, and thereby failed. In other countries also, various attempts of a similar kind have been made. I have not followed them myself, but I think perhaps one or other of the gentlemen from America present here can make a few remarks on this subject. So much for the fundamental differences between industry and agriculture and the resulting differences in the scope of shaping the size of the unit of production.

Now a second point. Mr. Ashby implied something in his remarks to the effect that by advocating the family farm and peasant farm I wished to maintain the standard of living of the rural population at about the level of the cave-man. I do not know how he arrives at this implication. The peasant farm is by no means inevitably tied down to lower possibilities of earnings, to lower standards of living and such things. If we look at Danish farming—of which we have heard so much—at Dutch farming, if we take Switzerland, Germany, Czechoslovakia, Sweden, Norway, &c., everywhere we will be able to find peasant farms which in their standard of living and in their cultural status fully bear comparison with what we find in the cities under comparable circumstances. Championing the family farm does not imply that one wishes to segregate agriculture from all cultural progress, or even from all progress of civilization. On the contrary these two aspects can be combined, as is proved by innumerable examples. We need only to open our eyes to see that these possibilities exist. This is no theoretical fiction, but real fact.

As to the question whether wealth can be earned—it was previously stated that the peasant must earn and would wish to earn—of course he wants to earn, and can earn money. He has proved that. Not only can he earn wealth, but he can preserve wealth once earned in a

manner in which no one else can, for this is proved by the history of centuries. So it is really not the case that the peasant is necessarily cut off from material progress.

I come now to the question whether the peasant requires other forms of life than the man of the towns, whether the urban forms of life should be brought to the peasant, whether the life of the peasant (even if he is not in so good a position as we have just assumed) need be poorer than the life of the town man. The question is, whether we should take it for granted that the forms of social life developed in town and industrial life are so splendid that we should under all circumstances convey this blessing upon the rural population. If we want to come to a decision, we must of course make up our minds what we consider finally desirable in life and, here again, we enter into a field of problems which cannot be gauged by scientific measurements. One man likes to play golf, a second drinks whisky, another goes to the theatre, another is glad to watch the growth of his work. These are very various attitudes towards happiness and sense of life, but one thing is certain, that one can find happiness in the scheme of rural life even if not blessed with an abundance of material wealth. How could it otherwise be explained that millions and millions of men, who had the chance of leaving the toilsome life on the land and of going into industries or to adjoining large farms as labourers or of emigrating, nevertheless stayed on their land even in times of material hardship? Surely that proves that there must be something giving meaning and riches to inner life. And that is what finally matters. Mr. Ashby and I will surely agree that what we both aim at is to make men happier and that we need only to discuss which ways to that goal are the safest and which the more dangerous. As to the aim we are certainly of the same opinion.

Now, a further question. By what means can we give to the rural population these advantages of the urban and industrial forms of life on which Mr. Ashby places so much emphasis? Are there no possibilities by means of the development through which agriculture is passing in very many countries, by the opening-up of the country-side by transport facilities, by the growth of education, &c.? Here are means of conveying these benefits without destroying the forms of life which have grown up in agriculture, certainly not by chance but in natural organic growth. I will return to this subject later.

I would now like to deal with another problem also broached. That is the problem of population policy. I seem to have expressed myself rather clumsily if I was heard to say that I only wish to

maintain a strong rural sector in order to prevent the extinction of the cities. Far from that. I do not consider the growth of the cities to be such a desirable feature that I would exhort the rural section to make exertions simply for the sake of the cities. For one thing I do perceive that in all civilized countries the birth-rate is dropping at an alarming pace and that the surplus of the rural sector is greater than that of the urban sector; therefore it seems to me to be important that the civilized countries should foster this rural sector which mainly contributes to the maintenance of the whole population, in order to check a decrease of the total population. It may be that my views are unsound, but I believe that the studies of O. E. Baker and many others confirm my opinions. That, however, is not so very important.

Now a further question touched upon was fear of the collective. I do not know why I should be afraid of the collective. I can well feel anxious that the execution of such experiments as have been made on a large scale in creating collectives may plunge innumerable people into misery. If Mr. Ashby emphasized that my suggestions are so immensely dangerous, I, on my part, believe that the ways he advocates are fraught with much greater dangers; for they are based on theoretical conceptions and on the wish to transfer operations to new fields for which we have no precedents. Here is an experiment, and experiments always are accompanied by danger. We have had a few experiments, such as Russian collectives. They offer no evidence of any benefits that might be found in collectives. One thing is correct that to-day more achievements of civilization are to be found in the Russian villages than formerly, that they are more opened up, e.g. by wireless. It is also correct that in many villages much more is being done in the way of schools, hospitals, &c. But all that has not grown up out of the collective, but has developed as the result of very systematic State guidance which consciously created this rural progress. What the collective has brought so far, according to what can now be seen, is primarily boundless misery and destitution and destruction of what previously had been; and whether the collective be able to offer any equivalent must yet be awaited. Certainly it has not yet been proved. And if we regard things coolly, the doubts will be greater than the hopes. Of course, if the State strives with immense energy and with the greatest display of power to increase production, then certainly a higher output can be attained in certain areas where the population had hitherto lived in a state of complete self-sufficiency. But if the same amount of energy, force, and will-power had been spent in another

direction, in the preservation of the family holding, the purely economic effect would most certainly have been greater.

Perhaps the whole discussion or controversy between Mr. Ashby and myself may have arisen from the fact that we misunderstood each other, as often happens. Partly it has a different source, namely, a difference in what is essential to human happiness and the ways of making men happy. These things we cannot mutually prove to each other. We must believe or not believe. On matters of faith one should not enter into controversy. One should fight, if need be, *for* one's faith, but not *about* one's faith. But I think it has been useful that we have again taken up this subject; for the decisions as to the paths that should be followed are so momentous in their consequences that the pros and cons cannot be weighed seriously enough. I do not think that I have convinced Mr. Ashby by my remarks any more than he has convinced me. We have both struggled in thought too deeply in these matters and cannot change our convictions in a conversation of half an hour. But I hope my answer will give him food for thought, just as his remarks have given me food for thought. And I hope that this discussion will contribute to impelling us both to re-examine most conscientiously our ground. For the consequences of our convictions, if we have the chance of putting them into practice, have an immense reach.

J. F. DUNCAN, *Scottish Farm Servants' Union*.

I wonder whether in five minutes I can do anything to cool down this heated atmosphere. This I thought was a conference of international economists, but whenever the small farm is brought into discussion there seems to be a danger of lapsing into the usual politician's rhetoric. Now I want to put one or two questions to the economists present. A great many of you here were like myself reared on small farms. Why do we not go back? Why do we all see to it that we get away as far as we can from the small farm? For exactly the same reason that we have in every country, every peasant country as every other, the land flight—I think Zörner will recognize the term as it was Germany which gave it to us. These people do not leave the family farm and they do not leave the peasant areas unless for a very good reason, and therein lies the test whether rural life is better or worse; whether rural life is more attractive or less attractive than urban life. That question is settled by the people who live in the rural areas because they desert the rural areas, and so it is not a question of whether *we* think the rural life is better. (We did not! We thought it was much better to go and advise them about rural

life.) The question is not whether we think the rural life is better. The question is: What do the people who have got to submit to the rural life think about it?

I heard Professor Warren telling us about the family farm—the ideal family farm, where when the men feel like it they work hard, and when they are not feeling like it they do not work hard. I was not reared on one of that kind. On the one I was reared on, we worked hard all the time, and we had to work hard and never slackened at all. I do not know any life in which the worker is more engrossed, more held to his job, as we say, with his nose to the grindstone, than the life of the small farmer who has got to arrange his own affairs and has got to carry through. There is no use trying to shirk that fact. The farm worker who is working on regular hours and who is working for a regular wage has a very much easier time of it than the farmer who is working his own farm. The children of the farm worker have a very much easier time of it than the children of the small farmer. It may be different in America, I know it is not different in Scotland. I have seen the children in Denmark; I have seen them in Germany; I have seen them in a good many of the European countries; and wherever I go I find the same thing is true of farm life, that the children are robbed of their childhood, robbed of their youth, and that it must be so, otherwise the family farm cannot keep going.

What I wanted, however, to bring you back to was—how are we going to decide this question? Is it on our traditional notions of the family farm, our ideas of a populated countryside, or are we going to discuss it on the economic results and the social results? Are any economists here prepared to contend that the product of labour on the family farm is greater than the product of labour on the well-managed farm which is conducted on scientific lines? All the figures that I have ever seen produced by the economists, not produced by myself, have shown that where there are small units of farms the amount of human labour required is greater and the product per unit of human labour employed is less. The purpose of agriculture after all is not only to provide a living for the people in the rural districts, but also to provide food for the community as a whole. And surely, if we are going to see an improvement in the standard of the people engaged in the agricultural industry, whatever other governmental regulations we make, whatever sort of rigging of the price structure we may engage in, every economist's figures that I have ever seen come back to this, that unless we can increase the productivity per unit of labour em-

ployed, we cannot hope to increase the standard of living of the people in the rural districts to anything like the level of that in the industrial areas. That is the fact to which I would like the economists here to apply themselves. If the economists can show that it is possible to produce more per man on the family farm, that the smaller unit in agriculture is different from the small unit anywhere else, and that the more labour there is employed in agriculture the more productive it is going to be, then we have something to go upon. I think that whatever differences there may be in the organic nature of agriculture and in the structure of industry, the test of productivity is going to be the unit of labour, and if it can be shown that the unit of labour is more productive on the small farm, then we will simply have to buckle to and make all the small farms we can. But if you are not going to do that, then cease issuing these statistics over which I have worried and all these figures that you put before us, and get back to the politics of the question, and abandon the economics. If we keep to the economics of the question, it is not a question of what happened in Russia, it is not a question of a comparison of what happens in America and what happens in any other country, it is a comparison within an area, the unit on the same kind of land, in the same social setting, and under the same economic conditions. That is the comparison we have got to get to. We can make no effective comparison between what happens in America and in Europe. American agriculture is entirely different from ours. We can make no effective comparison between a social structure such as we have in this country and a social structure such as exists in some other European countries. It is within the same social structure that the comparisons have got to be made, and I suggest that, if the economists apply themselves to that and keep within relevant facts, farm management is just as capable of improvement on the larger scale, just as capable of being handled on the larger scale, as it is on the smaller.

Finally, the era into which we are entering, whether we like it or not, is an era of controlled and planned agriculture. We take some steps in this country, which at once affect the agriculture of Denmark, and Denmark, whether it likes it or not, has got to plan what it is going to do with the production that it cannot get rid of. As soon as planning of that character is applied, I want to put it to you economists: Is it easier to apply a national plan to a multitude of small units, or is it easier to apply a national plan, even to make a national plan, if the units are larger and are on a scale that can be handled? I think that, if these facts are taken into account and if

the thing is discussed from the point of view of economics and not from the point of view of sentiment, the case for the small unit, as against the large unit, certainly has not been put in this Conference so far.

W. SEEDORF, *Göttingen, Germany.*

Thanks to the divergency of opinion which has arisen between my colleagues Zörner and Ashby, I think we have come right down to the root of the matter we are dealing with. And the statements which Mr. Duncan has just made also lead us there. I believe I have already made the remark—and others have also voiced it—that we easily misunderstand each other. That is partly a matter of language, but it is more a matter of the personal store of experience which each one of us carries in himself and which is expressed in his thoughts and all his actions. It is not possible for a German to understand fully things in England and America; and when things are presented to us from those countries and are presented to us as satisfactory or as excellent, we often cannot quite follow the reasoning. I think this mutual misapprehension is a reason for the failure of many of our discussions. I would like to tell you something of my experiences in America and other countries. Mr. Tolley has told us to-day something of the classical theories of economics. These theories were evolved about 120 years ago, particularly in this country by Adam Smith, and were subsequently further developed in a certain direction in Germany. In this period of the first development of economic thought, sentiment, as Mr. Duncan called it, or a perception of the human element, as I would like to call it, was pushed very far into the background. This lack of attention to the human element still clogs us to-day, in our agricultural science as well in economic thought. We owe thanks to the Americans, at least in my opinion, for the development of rural sociology as a special science. But there are also other branches of agricultural science which deal with the human element. I would only mention labour science, which has received little or no attention hitherto.

Now one fact made me ponder greatly, a fact which I observed in America. Up to now we have always spoken of the physical and economic factors which affect the systems of farming and also the size of the holding. I would like to point out that we have treated our subject only from one angle. If we add the human element as a dominating factor, we gain a different view of these problems. In the United States, I was told that farms that had been abandoned by farmers of other races could still offer a good living to Germans.

And what is true of the Germans also applies in similar manner to the Danes, Swedes, and Norwegians. These differences seem to me extremely interesting, and I would have liked to pursue further investigations in America, which is, so to speak, the great experimental field for these questions. The problem is how men of different racial origin, farming side by side, form their systems of farming. I will only state one striking example from the State of Wisconsin. Here there is one area in which Swiss cheese can be made, because the area is settled by Swiss. The others have not been able to learn the process. Such differences are to be found in all countries. Take just one example from Germany. A study of the distribution of the pig population shows that the pigs are mainly to be found in the north-west corner where the Low Saxons live, who are somewhat related to the Anglo-Saxons, and indeed, about a century ago, imported their breeding stock from Great Britain. The feed for the pigs is not produced in the north-east, but in the east. It was thought possible to transplant the fattening industry from the north-west to the east, but it was found impossible. In my opinion, that was mainly the effect of the human element, because the men, in this case the Low Saxon peasants, had a special aptitude for this enterprise.

But I would not like to conclude without making a remark about the collective—without, however, any political implication. In my opinion, if a collective is established by a capable man with a thousand backward peasants, this collective will undoubtedly operate more successfully than if the thousand peasants had been left to their own devices. But if a collective is established with a thousand efficient peasants under the charge of a manager who is less competent than the peasants, it will be a failure. It is only, therefore, as we succeed in making people more efficient that we can hope for success.

Finally, I would like to ask the question: What is the aim of the Conference? My colleague Zörner already pointed out that our aim was the happiness of men. At Eilsen our president expressed our aims very finely by saying that we were to induce sick people to go not to the quack with his sign-board, but to the trained medical man, meaning by that the economic scientists. We wish the health of agriculture, of world agriculture and, when we aim at that, we must aim at the health of the whole world. For this, we must realize the place of agriculture in the whole economy and we must, above all, realize the place of the rural population in the whole population. If we pose this question, we shall perhaps find in this room as many opinions as there are men in it. No fixed scientific statements can

be made. But it is necessary that the States should be guided by these considerations. We want healthy individuals, healthy nations, and we in Germany are now convinced that at least a certain proportion of rural population is necessary for the health of the nation as a whole. If we want to maintain this proportion of rural population, we must keep agriculture, as the economic mainstay of this population, sound, and this is in my opinion one of the vital questions which we must face in the future.

H. C. TAYLOR, *Farm Foundation, Chicago, U.S.A.*

First I want to agree with Mr. Duncan that a family farm that is not large enough for a family farm is too small a farm to be a family farm, and is to be condemned as such! The main point I wish to bring forward is just a bit of information. Back five or six years ago, when the insurance companies of the United States were finding great numbers of farms turned over to them because of the depression and because the former owners could not pay the debts, it was a serious question with them how this land should be utilized. Many of the men in charge of the land management of the insurance companies believed that the way out of the problem was to convert these farms into corporation farms and thus find a way to make the land profitable. Some of the insurance companies were more timid than others, but one large insurance company arranged for the organization of a large corporation in Iowa, the purpose of which was to farm, by modern large machine methods, a large number of farms. Mr. Collins was at the head of the corporation, and he took farm after farm. His men went to each farm one after the other and planted, seeded, and then later went and harvested. All the fences on the inside of the farm were taken up because they were not needed and because he wanted to make each farm into one field. The farm buildings were neglected and it was not long until the farm houses were deteriorating very rapidly. I remember that at the American Country Life Association, in 1930, Henry A. Wallace, the present Secretary of Agriculture, made a little statement with regard to the inevitable trend of affairs in this respect and how it might affect rural life. Within the last two months I have made a point of visiting a large number of the insurance companies and having conferences with those in charge of land management. There is not one of them that does not look upon corporation farming as he would look upon the strongest of poisons. Tremendous losses were made by the companies that undertook this, and at the present time there is a unanimity of opinion

among the larger insurance companies of the United States that the one thing to do is to lease the farms, to put the buildings and the fences in good condition, and provide lime and various fertilizers that may be needed, but especially lime, and seeds for legumes and grasses, and re-establish these as family farms and sell them back to the family farmers as soon as possible. I was talking to the chairman of a joint committee of fifteen insurance companies on this subject just the other day, and he told me of the losses other companies had made and of his good fortune in being a little timid in proceeding along this line. I said to him, 'Didn't you think five years ago that perhaps the other fellow was right?' He said, 'Yes, I did, but fortunately the other fellow made the demonstration.'

ALEXANDER HAY, *Essex, England.*

I would like briefly to refer to the types of farming which exist north of London, with special reference to two particular types. The first is the smallholding, and the second the farm employing labour. After the War there was a considerable settlement of smallholdings in the county, as there was in other counties, both by men who had experience of agriculture and by ex-service men. I had the opportunity of advising these holders over a period of fifteen years. I should say roughly 40 per cent. of the original smallholders have gone, of the ex-service men 85-90 per cent., simply because they could not live. In the case of a few of the ex-service men, if their health did not break down, the health of their wives did, and they had to go out of farming.

Now, take the other type of holding, the holding employing labour. Small or large, it is immaterial. What has happened to this type of holding in an area adjacent to a huge market such as London? Two new types have gradually grown up during the last fifteen years. One type is a small unit of land, specializing in glass, market-gardening, flowers, fruit, poultry, employing a moderate amount of labour, but gradually ascending in the scale of efficiency; and in many cases becoming not only an efficient farm, but a farm employing labour of a very high degree of skill. Leave that and take the other type of farm, the mixed or the arable farm. Many of the farmers in this area went bankrupt during the depression in 1890. They were superseded by farmers from the north without capital, grass farmers from Ayrshire, and more recently by immigration of farmers from northern and other districts. What is the position of this immigrant farmer? He is a man of considerable educational ability, a very high degree of skill in management, and ability,

such as you saw in Fife the other day, to organize his unit so as to get a maximum output from more than one source. The result is an increase in the efficiency of this holding with a higher degree in skill of labour, but specialized labour—by specialized labour I mean a skilled cowman, a skilled tractor-driver, a skilled horseman, if necessary a skilled shepherd, a type of labourer getting a much better wage and more efficient. So that the final conclusion we get in areas adjacent to London is that the larger unit employing more capital can give a higher turnover, and at the same time employ a more efficient and better paid labour in the country-side.

S. SCHMIDT, *University of Cracow, Poland.*

I think that all the papers presented this morning and this afternoon were most valuable contributions to the problem under discussion. But, nevertheless, I venture to express the opinion that discussion has revealed how far we do not know each other; and that sometimes too we are inclined to draw general ideas upon observations which perhaps do not justify any generalization at all. I do not want to touch on Mr. Ashby and Mr. Zörner any more, but I take for instance the very interesting remarks of Dr. Lang. I could hardly agree with his statement that what is being observed in Germany, or in eastern Germany at least, holds true for east Europe as a whole with the single exception of Russia. We in Poland, on the contrary, do notice a quite different movement from that in Germany. Peasant farms of the smallest size are increasing in number, the middle size being wiped out. The high rate at which the population increases is responsible for that movement. Social problems are involved here along with economic ones. After all I realize that Professor Sering was right in putting forward an investigation of landowning and farm organization in different countries. We need such an investigation, and after it has been completed we may have more room for drawing generalizations.

J. P. MAXTON, *Oxford, England.*

There is just one issue which I would like to place before the Conference. We have not heard a great deal about economics in any of this discussion, and it is interesting that while Mr. Bridges's paper, I think, places before us a very closely reasoned economic discussion of this problem of the size of farm and the type of farm organization in all its various aspects, we have not had very much discussion on his paper. It is significant that Mr. Ashby and Mr. Duncan (and Mr. Hay also to some extent), who have spoken from

this country, have all emphasized the economic efficiency aspect of the system of farming. They have emphasized, in other words, the approach which any one would have to take if he set out to organize farming for the purpose for which, when all is said and done, it is necessary to organize farming, namely, to produce food to exchange for the goods other people produce.

Now, there may be a great deal of fun to be got out of farming on a small scale, but I do not think any one can come forward and ask the rest of the community to pay for that fun. The miner gets no pleasure out of digging coal, but we have to get coal. And therefore I do not think we should ask the miner to pay for the pleasure which some of you tell us the small farmer gets out of producing on his present scale. If any one were asked to organize farming purely on a basis of economic efficiency, it would not be the welter and mess of sizes and all sorts of conditions of things which we have at the present time, which is almost like an aerial view of a Woolworth store.

I have been expecting some one to get up and say to the British delegates, 'Yes, you people, you are looking purely at the economic point of view, and you are forgetting the social point of view.' We are not forgetting the social point of view. It is not legitimate to say that the attitude which Ashby and Duncan and myself are trying to put forward is purely an economic point of view and that we are neglecting the social point of view. The fact is that it is two opposite *social* points of view. On the one side there are people who believe that the social structure of society is built up on a system where the one man owns the farm, where the same man owns the capital invested in that farm, and the same man does the work. Few other industries nowadays could be organized efficiently on those lines—we could not produce baths and the plumbing which the Americans are so keen on; we could not have all these microphones and dictaphones that are helping us to run this Conference, if production was organized on that system. The reason why we do not have a modern system of organization in farming is not due to an opposition between economic and social attitudes. It is due to a different attitude to social conditions; on the one side this idea of the small man, the distributivist point of view as we call it in this country, and on the other side a system of society where we accept that some people own and control the capital—it may be the community that owns and controls the capital—where somebody owns the land and controls the land—again it may be the community—and other people do the management and other people do the

work. These latter are the forms of handling and controlling the factors of production, land, labour, capital, and management, which we have in all the industries which have made our standards of life possible in the twentieth century, and it is very little use talking in terms of the eighteenth century.

G. F. WARREN, *Cornell University, New York State, U.S.A.*

If I may be permitted to speak twice, I should like to correct some misunderstandings. So far as I have observed, governments almost universally divide the land into too small units. When New York was settled after the Revolutionary War, they had the 50- to 100-acre farm idea. These were too small for family farms at the time, so that no sooner was the country settled than they began to combine farms and tear down houses.

When my native State of Nebraska was settled, it was under the policy of 80-acre farms except for soldiers who were allowed 160 acres. No sooner was this settled than the farmers began to unite farms and tear down houses. In 1880, there were 886 farms of 50 to 99 acres in the county. Nearly all of these were 80 acres. Ten years later, there were only 482 of these left; and by 1920, only 117 in this size class.

It is a mistake to expect a man to make his living on a farm that is too small to furnish full employment when modern machinery is used. This is dooming the man to perpetual unemployment, unless industrial work is available. The movement to have country homes for industrial workers is exceedingly desirable. Such places need not be large because the primary source of income is from industrial work, but a real family farm should be large enough to employ the family. As the representatives from Denmark and Czechoslovakia have just stated, it is the family farm or middle-sized farm that produces farm products most cheaply, so in the United States. In the United States, this is generally a two- to three-man farm.

I. DE ARLANDIS, *Madrid, Spain.*

I did not mean to speak, but I will just make a short reply to Mr. Duncan and Mr. Maxton. Mr. Duncan said that the children of the wage-earners live better than do those of the small farms. From my own experience in Spain I must say 'on the contrary'. How otherwise can one explain the Spanish social revolution, where people who worked as labourers on the big estates will give it up and will work a little farm of their own?—very hard work, I agree. Since they have passed nearly 500 years working as wage-earners and the children

of wage-earners—if they had lived better in their old condition, I think they would continue to do so. Then there is another factor, namely, the instability. Mr. Duncan presupposes the existence of social legislation which guarantees rights to the wage-earners, and which protects them from being chased off the day after to-morrow. It must be recognized that the farmer's children know that if they all work hard they will have their home and they know where they are, but if there is no social legislation the farm worker's children never know where they will be to-morrow. Then as to what Mr. Maxton said, we never could organize agricultural production in the same manner as industrial production; but because of social, political, and moral reasons, I would say not only, 'we could not organize agricultural production in the same method as industrial production', but 'even if we could, we would not'.

O. H. LARSEN, *University of Copenhagen, Denmark.*

I would like to say in reply to Mr. Duncan that if he would only come to Denmark, I should be very glad to show him our small and middle-sized farms. I did not quite understand what he meant by saying that the hired labourers enjoy better conditions than the small farmers. On the whole the investigations in Denmark over twenty years show that on the average we have 20 per cent. higher labour income for the small farmers than for the hired agricultural labourers. As to the living standards I would say that naturally the small farmers must work longer than the hired labourers, but with regard to the children I should think that the conditions for the children of the farmers are much better than for the children of the hired labourers.

With regard to the living standards on the middle-sized farms, while of course I know best the conditions of the Scandinavian countries, but also a little of those of Germany, I can tell you that the standard of living during the last thirty years has been raised very much. Of course it was raised too much during and after the War, but this was due to the large income during these years. But if we compare the standard of living as it was on the middle-sized farms before the War with the standard now, we shall find a very big difference in all the Scandinavian countries, and especially in Denmark. I do not know very much about the conditions in Great Britain, wherefore I am unable to make any observations; but it is a fact that in our country the living standards are, from an economic as well as a social point of view, very much better for the small farmers than for the hired labourers.

Dr. Warren said that in America the investigations show that—just as in Denmark—the middle-sized farms have given the best results. Naturally I know that what I have called ‘middle-sized’ farms in Denmark are somewhat different from what Dr. Warren has called ‘middle-sized’ farms in America, but as far as I can see the difference is not big enough to make any difference in the results, as, even in America, the middle-sized farms have proved to be the most profitable.

PROBLEMS OF MILK MARKETING REGULATION

OPENING PAPER

W. H. BRONSON

New England Milk Producers' Association, Boston, Massachusetts, U.S.A.

THE organizations with which the writer is connected as statistician, the New England Milk Producers' Association and the New England Dairies, are co-operative associations of dairy farmers with a total membership of about 23,000. The New England Milk Producers' Association is a bargaining organization which owns no milk plants. In the Boston market it sells through New England Dairies, a central sales agency made up of the NEMPA and ten co-operative milk organizations which own and operate their own plants. In addition New England Dairies owns and operates twenty-five milk receiving stations and has operating contracts with four additional milk plants. New England Dairies sells only to distributors and does not compete on the street with distributors with whom it does business. Altogether, the organizations market 75 per cent. of the milk sold in the principal city markets of the New England States except Connecticut.

The primary market is Metropolitan Boston with about two millions of a population. There are 15 or 16 secondary markets which vary in size from 20,000 population up to 400,000 population, with about the same total population as exists in the primary market of Boston. All of these markets are inter-related as to supplies and factors affecting price, but they are all operated as separate markets.

The Metropolitan Boston market receives its supply largely from the States of Vermont, New Hampshire, and Maine, all of which have excess supplies of milk above the needs of their own population. The centre of the supply is about 220 miles from the market. About 90 per cent. of the milk for the Boston market is delivered at country receiving plants which are equipped to receive, cool, and ship whole milk. Part of the plants are also equipped to separate milk into cream and skim milk. Cream from these plants is shipped to the market while the skim milk is manufactured into skim milk powder, casein, sweetened condensed milk, and cottage cheese. These latter plants handle the surplus which cannot be sold as fluid milk.

The market always has sufficient supplies of milk from the New England Milk Shed to take care of the fluid milk needs throughout

the year, but does not have sufficient milk to cover the cream needs of the market. The amount of milk required to cover the cream needs is about equal to the amount required to cover the fluid milk needs. To supplement the New England deliveries of cream the market obtains from mid-western States (from 1,200 to 1,500 miles from Boston) about 25 per cent. of its annual cream requirements in the market. The supply from this source expands and contracts as the supply from New England decreases and increases. At times as much as 60 per cent. of the cream supply for the market comes from the mid-western States to Boston. About 80 per cent. of the milk for the Metropolitan Boston market moves in tank cars. Cream largely moves in 40-qt. cans.

The secondary markets obtain their supply trucked-in largely from local territory around the individual cities from within a radius of 50 miles, the milk being picked up from the farm and trucked directly into city plants. At times during the year these secondary markets bring in milk from the Boston area to supplement local supplies. All farms selling milk in these various city markets must meet the inspection requirements of State and Local Boards of Health, which to some extent limits the supply area.

The fundamentals which operate in all markets are the 'use plan' of sale of milk to distributors, generally two classes being used, a fluid or liquid milk class and a class for all other milk. This is somewhat different from other markets where the classification of milk is extended into a greater number of uses. The second fundamental is that the proceeds from the sale of milk on the 'use plan' are distributed to producers on a base-rating plan. These two fundamentals apply to all markets, while in the Boston market we have a general pool of the market. In the secondary markets individual dealer pools are used.

We have a considerable amount of government regulation operating in our various milk markets. The Metropolitan Boston market for three years has operated under a Federal Milk Marketing Order under the Agricultural Adjustment Administration, which has fixed the prices distributors should pay for milk, provided for the distribution of the proceeds of the general pool among producers, and provided administrative machinery to carry out orders issued under the law. Recently, a Federal District Judge has made the law inoperative, and the Order has been suspended pending an appeal of the case to the Supreme Court.

In the secondary markets State Milk Control Boards operate. Most of these Boards establish both the producer price to be paid

for milk and also the prices below which milk shall not be sold to the consumer. Owing to the inter-State nature of most of these secondary markets the enforcement of producer prices has not been satisfactory. The fixing of prices to consumers has been satisfactory as far as retail and store milk is concerned, but has not operated satisfactorily in the wholesale trade.

One of the difficulties of prices administratively set by government authority is, first, that market situations are not met promptly. This is particularly true of the Federal Order operations in the Metropolitan Boston market in that it takes from four to six weeks to make changes in prices. Second, the concept of a parity price for milk based on prices of other commodities has not operated too satisfactorily in the establishment of fluid milk prices. Producers are unable to see why prices should be reduced if they are above parity. Again, when rapid advances occur in feed prices such as took place this year after the beginning of June, the parity limit tends to keep prices lower than might be warranted on a basis of costs.

In this market close on 90 per cent. of the milk is handled and controlled by farmer co-operative organizations, and these groups have used the Federal Order to provide machinery whereby the co-operatives could co-operate with each other in the establishment of uniform milk prices in the market and a general pool of sales.

The operation of the Milk Marketing Agreement in the Boston market where a pool is in existence has resulted in a very large increase in the volume of milk in the pool. This milk has come from two sources: first, the shifting over of milk from other fluid milk markets which were at lower prices than the Boston market and, second, the shifting over of producers from the production of farm-separated cream to the delivery of milk and from new farms coming into production. At the same time the pool has also lost fluid milk sales, even though the market sales as a whole have shown increases. This has been due to the fact that the Federal Courts have not given the decision which will make possible the enforcement of the prices on non-compliance distributors. Spreads between fluid milk prices and prices for manufacture have been carried at higher levels than were formerly in effect, and price returns for milk as compared with grain prices have improved. The average deliveries of milk per producer have increased, and the whole operation of the Federal Order and the pool of the co-operatives has increased the supplies of milk in the market.

The effect of a fixed price and a pool under the milk marketing agreements in the Boston market have tended to lead, first, to a lack

of interest on the part of some of the co-operative groups in pushing fluid milk sales because they got their share whether they sold milk or not. Since sales effort increased costs both through actual sales expense and credit losses, it followed that greater net return could be obtained by not making sales. The limiting factor here was the question as to how long the pool would continue.

Second, since large volume country operations made greater profits for the co-operative group through reduced costs per unit handled, all groups tended to add to their supplies. This move increased the volume of milk in the pool and depreciated the net price which could be paid. The limiting factor here was the required payment of a surplus price for milk for a period of from 60 to 90 days before the new producer could receive any share in the fluid milk market.

Third, some co-operative groups which had small fluid milk sales and large amounts of manufactured milk opposed the establishment of adequate prices for manufactured milk, particularly the price charged in the formula for skimmed milk.

Fourth, the pool lost fluid milk sales, and the volume of surplus milk increased from an average of from 27 to 30 per cent. of the total deliveries in 1932 and 1933 to 40 per cent. in 1934 and 50 per cent. in 1935.

Yet in spite of the results of the pool operations, I believe price fixing requires a pool to operate to any degree of satisfaction. The reason for this is that, under price fixing without a pool, many groups of farmers would have no part of the fluid milk market, which in turn would bring secret rebates and discounts to obtain fluid milk sales, and as a result the price could not be maintained.

Milk control legislation, both Federal and State, was largely brought into being because of the low prices to which milk went during the depression. These low prices were largely due to the low prices to which butter and skim milk by-products moved. The purchasing power of butter during the three-year period 1932, 1933, and 1934 was the lowest we had known since 1864 and 1865. For a two months' period in 1933-4 the purchasing power of butter reached a low point of only 55 per cent. of 1910-14 level. Skimmed milk had no value as a manufactured product. Contrasted with this, the present purchasing power of butter is 107 per cent. of 1910-14, and skimmed milk by-products are at the highest levels we have had for years.

With the recovery of butter and manufactured dairy product prices it may very well follow that less regulation will be requested

by producers. It is probable that the low level of butter prices in England, where in 1934 the purchasing power of butter was 68 per cent. of 1910-14, the lowest in 90 years, was the important factor in causing the establishment of the Milk Marketing Board. As E. E. Viall points out in his article on the value of butter in *Farm Economics*, published by Cornell University, December 1935 issue, there have been no strikingly new developments in the technique of production that would tend to result in a permanent lowering of butter prices in relation to other commodities, and it is not probable that the purchasing power of butter has declined permanently. Under these conditions we can expect a rise in the purchasing power of butter, which will place a foundation under our prices and will make regulation unnecessary.

Control authorities have generally followed the wishes of co-operative organizations operating in the market and have carried through the general plans of milk marketing which have been found satisfactory over the years. Milk is generally sold on a classified price basis. This basis of sale of milk puts all distributors on an even footing as to the cost of milk, provided, of course, that milk used otherwise than liquid is established at prices generally equal to market prices.

One of the important advantages of this plan of selling is that it insures a market for all milk produced in the area since, although the fluid milk market is limited, the market of milk for other uses, including butter, is not limited. Distributors can take on additional supplies to clear up a market without loss to themselves. This plan of selling generally insures to the producer the highest possible fluid milk market prices, and, since producers can influence prices of milk for other uses to only a limited extent, it follows that the best price returns can be obtained through the maintenance of the highest possible fluid milk prices.

One disadvantage of this type of plan is that it calls for detailed reports and accounting as to the uses made of the milk, and if the records submitted by distributors are not accurately audited some distributors may have the advantage over others in the cost of milk. The fact that this plan of selling has stood the test is shown by the fact that the great majority of markets in the United States operate on the classified basis of sale for milk.

Most markets also operate on a base-rating plan of payment to producers, particularly so where the market does not attempt to produce in the milk shed all the cream as well as the milk requirements of the market. In markets where the entire milk and cream

requirements are obtained from the normal milk shed, the rating plan is not used. Such large markets as Boston, Philadelphia, Baltimore, and Washington use a base-rating plan, while New York, which has a milk shed sufficiently large to cover the entire requirements of the market for both milk and cream, utilizes a composite price plan of payment to producers.

The purpose of a base-rating plan is to encourage the delivery of a more even supply of milk which will more nearly correspond with the fluid milk requirements of the market. The plan does not control production. Under the plan each producer is assigned a base rating based on his deliveries of milk during a prior period of time. For this base quantity a price is paid which is related to the price for fluid milk. For all milk delivered in excess of the base a considerably lower price is paid, which reflects the value of milk for other uses than fluid milk. The advantages of the plan are that it gives to the producer who produces milk more evenly throughout the year a higher price return than the producer who has a large seasonal variation in delivery throughout the year.

The plan has brought about an evening-up of production. The three fall months were made the base period, which induced farmers to have more fall fresh dairies. In recent years, owing to the fact that deliveries tended to pile up in the base period, the plan has shifted to the use of the low-quarter delivery of milk, giving the use of the highest of the three years' low-quarter deliveries of milk.

We have noted in the last two years since we discontinued the use of the fall period and prior to the use of the low-quarter deliveries that a much greater seasonal variation in deliveries of milk has developed. This trend is probably due to three factors: first, that we have discontinued the use of a fixed period in the fall for the establishment of a base; second, that over a series of years the producer has found on a declining market the price he received for his milk in December when costs were highest was no better than for the previous June when his costs were lowest; third, that we are now in the process of increasing the number of first-calf heifers per herd, which influences more summer production of milk through a greater number of spring freshened heifers.

One of the advantages of the plan is that when producers shift from producing milk for manufacturing purposes to the sale of milk for the fluid milk market such producers do not obtain as satisfactory a rating and as large a share in the market as do producers who have been operating on a base-rating plan for a considerable period of time.

Our experience in the market over a series of years indicates that changes in supplies of milk over a long-time period are largely related to increases and decreases in the number of dairy cows, which have a swing from high point to high point of from 14 to 15 years. For short periods of time supplies which will reach our market are largely related to price returns in other markets as compared with ours, both fluid milk markets and manufactured milk outlets. These shifts of supplies do not operate rapidly. Producers generally must see the higher price returns for some time before they are willing to change. Part of this is due to the fact that they must meet different sanitary requirements for the sale of milk in one market as compared with another, particularly when they shift from the delivery of milk from a manufactured outlet to a fluid milk outlet. To a considerable extent the attitude of the dealer determines whether a producer will shift or not. Where the distributor is active, supplies shift much more rapidly than they do when it is left to the producer to determine whether he shall change or not. There are many barriers, both economic and administrative, which slow up the shift of producers from one market to another.

Over a short period of time deliveries of milk are related to general pasture conditions and more particularly to the relationship of milk to grain prices. In our area where large amounts of concentrated dairy feeds are brought in from other parts of the United States this is an important factor. The large cash out-of-pocket expense which the dairy farmer has in our area is the cost of concentrates, and, when the check he receives for his milk and the bill he receives from his grain dealer show unfavourable relationship, he buys less feed and his production decreases. When comparisons are more favourable he is inclined to feed better and increases his production.

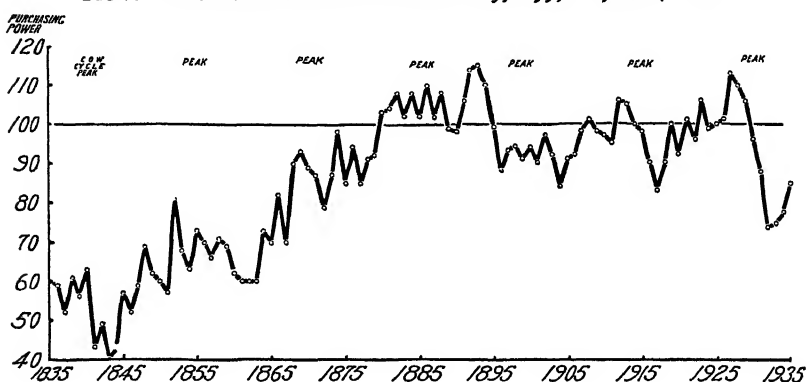
The cost of production as such, including all items, seems to have had little effect on the volume of milk delivered or the price received for milk. The size of the hay crop is generally of minor importance compared with prices of dairy feeds.

On the demand side we find the general business situation, the amount of employment, and total wages paid to be the most important items affecting the demand. These items affect not only the fluid milk consumption but also have a very important effect on the consumption, and the price, of butter and other manufactured products, and therefore the price level of milk used for other purposes than fluid milk, and in turn the level at which fluid milk prices may be maintained.

The demand for milk is also related in part to the number of

marriages. Sales of fluid milk maintained themselves reasonably well for a year after the recent depression started. With the depression and reduced employment and pay-rolls, the number of marriages showed a very sharp decrease, and the number of people of marriageable age who were not married showed a decided increase, reaching a level the highest on record. This situation has affected fluid milk consumption, and there will be a lag in recovery. On the whole, however, fluid milk consumption during the depression did not in our market decline much more than 10 per cent. It is now moving upward and has recovered a material part of the decrease.

FIG. 1. PURCHASING POWER OF BUTTER 1835-1935. 1910-14=100.



The demand for butter and the price for butter has a very material effect on the prices which can be obtained for fluid milk. Over a period of 100 years, as shown by the chart (Fig. 1), the purchasing power of butter in the United States has been related generally to the swings in the number of dairy cows and the ups and downs in business, employment, and wages. Generally speaking, the peak in dairy cow prices, which corresponds roughly to the low point in the number of dairy cows, has followed the peak in the purchasing power of butter by about two years. The last two swings in purchasing power have shown declines five years in succession from the peak and then start to move back up with minor changes in purchasing power, being influenced largely by general business conditions. It would appear now that we are on a major swing upward in purchasing power of butter, that the outlook for the dairy industry is favourable, and that we can expect materially higher prices for all dairy products.

The price of butter which determines the value of milk for other uses is one of the most important factors in determining how high

fluid milk prices may be established. When the spreads become too wide between fluid milk prices and the value of milk for other uses in the most distant zone from which milk must be moved to supply the market, some distributors may obtain distinct advantages in their ability to sell milk in the market by paying producers a price in excess of the composite price received by producers for all milk, limiting purchases to their needs for fluid milk and thus owning milk for fluid milk sales at a price lower than other distributors are paying on a use basis.

Again, groups of producers, under conditions of high spreads between the composite price received and the fluid milk price, find it profitable to come into the market at lower fluid milk prices and still obtain higher composite prices. We have had, in our market, spreads at times so wide that we lost producers from our general pool and at the same time lost fluid milk sales in the market. When this occurs the spread between the net price the producer receives and the fluid milk price becomes even wider, and the only corrective is the bringing of the spreads between fluid milk prices and prices for other uses closer together.

Wide spreads between fluid milk and other uses also cause producers to shift from the production of milk for cream, butter, or cheese to the delivery of whole milk for fluid milk purposes. This movement increases supplies and reduces the price returns to those producers who are already established in the market. It results in a widened milk shed and, where a pool exists, brings in additional milk, which in turn results in a further dilution of the fluid milk sales in the market and brings about still wider spreads between the fluid milk price and the composite price actually received by the producer for all milk.

The question of what spreads between fluid milk and the value of milk for other uses can be maintained generally depends on the percentage of fluid milk available for the market, which is being sold as fluid milk. As the percentage rises, wider spreads can be maintained. As the percentage lowers, lower spreads are needed to bring a stable market condition. The spreads which can be maintained are higher when business conditions are good and consumption of milk is expanding and also can be maintained at a higher level when supplies of milk are the lowest.

The price returns for milk for other uses have wide swings. In our area in June this year the milk for other uses had a value of about \$1.10 per hundred pounds at country points 200 miles from the market, while at the end of July under drought conditions and a

strong cream market the value was \$1.90 per hundred pounds, showing an increase of 80 cents per hundred pounds in a little over a month's period. Generally prices for fluid milk to the consumer show small variations and do not change rapidly. It is therefore very difficult to maintain a constant spread between fluid milk and milk for other uses. The prices to consumers normally move in changes of 1 cent per quart or $46\frac{1}{2}$ cents per hundred pounds. There must therefore be a considerable change in the prices for milk for other uses before a price change can be made in the price for milk sold as fluid milk.

Changing prices for fluid milk to consumers when prices are reasonably in line with other food products have very little effect on the volume of fluid milk sales in the market as a whole. Our experience indicates that the change upward of 1 cent per quart or downward the same amount, which would be equivalent to an 8 to 10 per cent. change in price, shows an inverse effect upon fluid milk sales of only about 2 per cent. The demand for milk appears to be relatively inelastic. In no case has our experience indicated that by a marked reduction in fluid milk prices can sufficiently more milk be moved as fluid milk to offset to the producer in his composite price for milk the decrease in the fluid milk price.

It is of course true that competition between groups of producers may result in one group suffering severely in the loss of sales in the fluid milk market by maintaining a price for milk when other groups offer milk to the market at lower prices. When part of the market is not pooling and not carrying an equitable amount of the milk which must be sold in the lower classification, the pool may lose sales rapidly under high spreads between the fluid milk price and the value of milk for other uses, while those outside gain sales through a reduction in the price.

In the case of cream, however, the demand is very elastic. Reductions in cream prices increase consumption of cream very materially. Large increases in cream prices reduce the consumption of cream. In some of the markets in the United States cream prices are held at materially higher levels than in others, and a comparison of cream consumption in those markets where high prices are maintained shows that such markets have a very much lower consumption than ones where lower prices are maintained. To some extent there is competition between cream and fluid milk. When cream prices are low many families will use a low butterfat cream instead of milk, particularly where the family consists of adults. When cream prices are high more milk tends to be used as compared with conditions when cream prices are low.

In conclusion, in the future of milk marketing two things stand out. First, the price levels of butter and other manufactured dairy products appear likely to recover their normal price relationship with other commodities. Under these conditions milk prices will have a foundation under them, which should make it possible for dairy farmers, through their co-operative organizations, to obtain reasonable fluid milk prices. Second, government assistance is likely to continue to be given to the milk industry in settling milk marketing problems, with the probability that there will be fewer price fixing government authorities and more direct negotiations between producer groups and distributor groups, with government authority providing for mediation between the groups. It is probable in the United States that, if the present milk marketing agreements and orders cannot be continued under the present law, legislation will be requested by co-operative groups of dairy farmers, which will provide a national milk marketing authority to assist in solving difficult milk marketing problems. The extent to which such authority will be used will be dependent primarily on the price level of butter and other manufactured dairy products.

DISCUSSION

J. LL. DAVIES, *Milk Marketing Board, London.*

As I am acting in a rather dual capacity this afternoon in that I am acting as chairman of this group discussion and am also one of the speakers, I shall speak for only a very short time, and I would like to make the discussion on this very important subject as informal as possible.

I was very interested in Mr. Bronson's paper, largely because I find they have the same difficulties in the United States as we have in England. For three years we have been struggling in England to try to create a milk marketing organization and, may I say, with some degree of success. I say with *some* degree of success, and at any rate with a great deal of criticism, public and otherwise. But in the United States they have had a longer experience than we have had, and for the last two or three years I have been trying to find out exactly what they are doing in the United States and the way they are doing it—and I am afraid quite unsuccessfully, because of their different States with their different orders and regulations. Mr. Bronson's talk this afternoon, however, has clarified the matter somewhat for me. I now find that they operate largely in the most important milk sheds through the big producers' co-operative

organizations, with government authority, but with very little, as I understand it, of government interference. That of course has its advantages and disadvantages, and I hope somebody in the discussion will try to compare the American results with the English results, having regard to the different methods of organization.

I will try to tell you very briefly what we are trying to do in England at the present time, and as the subject of the discussion is 'milk marketing regulation' I thought I would try to divide it into three very simple parts; first, the need for regulation of the milk market; secondly, the method of regulation; and, thirdly, the results of regulation.

First, very briefly, the need for regulation is, I imagine, pretty well the same in every country. The need for regulation arises very largely from the desire to pay producers a remunerative price by controlling supply to meet demand. That is putting it very generally, and, if I recounted to you the many reasons which are given for the introduction of the Milk Marketing Board, we could easily stay here all the afternoon discussing nothing else. But, broadly speaking, it is a trade union attitude by producers trying to make the best out of a market.

The method of regulation in the United Kingdom is quite interesting in that although we have more than one milk marketing board, there is only one for England and Wales. The others are in Scotland (several), and Northern Ireland (one). Broadly speaking, therefore, we do not deal with the milk sheds according to the district of consumption of the milk, but according to the district of production of the milk. But, even though milk comes from Scotland into England, we still split Scotland and England and have separate Boards. That perhaps is one real difference between the organization which we are trying in this country and the organization which, as we have heard from Mr. Bronson, exists in the United States. Speaking again of the method of regulation in the United Kingdom, I am personally convinced that what helps us most is the power given in the Agricultural Marketing Act, 1931, and subsequently in the Agricultural Marketing Act, 1933, two Acts of Parliament which provide for the organization of producers. In those Acts there is provision made for organization by producers, and when that organization takes place there is statutory power behind it. That, in my opinion, is the real secret of any success which organized marketing has had in this country in the last few years.

The method of regulation in detail is fairly simple. We have a Milk Marketing Board controlling all the sales of milk in England

and Wales. That Board is set up by producers themselves under the powers of the Agricultural Marketing Act, 1931. The Board consists of about 17 people, 15 of them, roughly speaking, elected by the producers themselves, i.e. the producers of milk in England and Wales, and two of them elected by the Government; so it is very largely a producer-controlled organization.

The powers of the Board itself are very wide, but the most important is that all sales of milk in this country are controlled by the Board. Briefly, the milk is marketed by wholesale and by retail, but in both types of sale there is complete control by the Board. I might compare the operations of the English Milk Marketing Board with one of the big American co-operative associations of producers—perhaps the Dairymen's League in New York, or Mr. Bronson's own concern—organizations somewhat like our own Board, with the difference that in the great co-operative societies the basis of regulation is voluntary, whereas with the English Board there is a compulsory basis, and the producers have no option but to sell through the machinery of the Board. That briefly is the method of regulation that we have in this country at the present time. The whole thing is crystallized, so to speak, in the regulations of the Board. We have 160,000 producers, and 70,000 of them sell by retail and 90,000 sell by wholesale.

The skeleton of the organization itself is quite simple, and after two or three years' experience we are now getting fairly clear of the problems of regulation and control as such.

I would therefore speak rather on the results of regulation in this country in order if possible to bring discussion, because the results of regulation, as you will agree, are much more important than the actual structure of the scheme itself.

What has the Board done? The first result of the Board's operation was to prevent the collapse in producers' prices. I believe this statement to be true, because in 1933, when the very loose organization of the English milk market was breaking down, there was some need for a tighter basis of regulation. From that point of view the Milk Marketing Board has been successful. It has been able to obtain for producers of milk much more out of the market in this country than otherwise would have been obtained either by free marketing or by some looser form of control.

I do not know in what order to place these results, but I think that, from the producers' point of view, the most important point is that the Board has obtained as much as possible from the milk market in the interests of producers of milk. That of course is easier in this

country than in the United States, and possibly in other countries, and mainly for the reason that we have a virtual monopoly in liquid milk in this country. Although we have a monopoly market in liquid milk, we of course suffer competition from world sources as far as manufactured milk is concerned. That might make it easier to organize as we have organized, and it might not be just so easy in the United States where there are several milk sheds and several possibilities of competition between milk sheds, one with the other, at different prices.

The second important result of the Milk Marketing Scheme in this country is that we have raised milk prices. It has been a matter of considerable controversy, but it is true that, since the introduction of the Board in the bottom of depression in 1933, milk prices by wholesale and by retail have increased to some extent in this country. Those of you who follow the index numbers will know, as far as present milk index numbers can be trusted to show anything, that prices have gone up to some extent in the last three years. Nobody can say whether actual returns to producers have been increased, i.e. actual returns in average price per gallon, but the total cash paid to producers, taking all producers, has been increased considerably in the last few years. Although the retail price increase cannot be measured accurately, it is undoubtedly true that there has been a fair increase in retail prices, especially in some smaller towns. Those are two rather important results of the Milk Marketing Board and its operation for the last three years.

I am not passing any comment on that second result because it is open to discussion as to whether the result as I have put it is good or is bad from (1) the point of view of the producer, (2) the point of view of the consumer, and possibly (3) the point of view of the public or the State.

A third result of organization in milk marketing in this country is that we have not been able to sell any more milk in the liquid market since 1933, i.e. our quantities of milk sold liquid have remained fairly constant from year to year. There of course we envy the United States in that, as their figures show, consumption of milk per head is considerably higher than it is in this country. I am speaking of course of England and Wales, but it is fairly well known that our milk consumption is considerably below most other well-known countries of Europe, and particularly of Scandinavia. That is perhaps one reason why we are paying less attention to problems of regulation as such, and more attention to problems of expansion of the market. I may put it another way. We are not really troubling

very much about the structure of our marketing system. The only possibility, as far as I can see at this stage, of the English Milk Marketing Board paying better prices to producers is through the expansion of liquid milk sales. We have gone as far as we can go in the increase of prices. We have taken as much out of the market as we possibly can, and we are now approaching the constructive marketing side.

It is a very interesting problem whether the English Milk Marketing Board can possibly expect that expansion and development in consumption with the initial rise in wholesale and retail prices. And that leads me on to a possible point of discussion whether it would be wise for the English Milk Marketing Board to try to reduce prices, not only to its own producers but to its wholesalers and retailers and to the public, and get this expansion of consumption; or alternatively whether it is better to charge the same prices, high though they may be regarded at the present time, and get the increased consumption by means of differential price schemes. This has been discussed at various conferences of agricultural economists, and I feel that within the next five years or so there will have been made some very interesting experiments in this country in selling milk at differential prices for liquid consumption. This is by no means a new practice, as we all know, because raw-material milk is sold at the moment for half a dozen different purposes at half a dozen different prices. If you compare our liquid milk price in this country, an average of 15*d.* per gallon, with our butter price of 4½*d.* per gallon, you get some idea of the complexity of this milk marketing business as we now know it, when the raw material is sold at 4½*d.* for one purpose and at 15*d.* for another.

Here again I would draw some distinction between our experience in this country and the American experience where I think the price spreads between the different uses of milk are much smaller than they are here. For instance, there is a much closer relationship between the price of milk for butter-making and the price of milk in the fluid market than we have. That comes about for the very simple reason that our liquid milk price bears no relationship, or at least very little as far as we can discover, to the world values of butter or even to our English values of butter, because the important English market is the liquid market and the butter market to us is very largely one of imported supplies. But that takes me away from my point, which I hope somebody will take up, whether liquid milk prices generally should be reduced, where that is possible, to induce increased consumption, or, alternatively, whether

we should turn our efforts in other directions and make these experiments in differential priced sales.

As an example of these differential price schemes I can only quote our school-milk scheme where we supply milk to school children at 1s. per gallon, as compared with the retail price of round 2s. 2d. per gallon. By that means we have a scheme of providing milk to one category of consumers at less than half the price that milk is normally sold by retail to another category of consumers. We are starting on another scheme of differential prices in an experiment in South Wales where we are supplying mothers and children under five years of age with one pint per head per day at a retail price of 1s. 4d. as compared with the normal retail price of 2s. 2d. That is all designed with one common purpose, to pass the supplies of milk available in this country over to consumption in the liquid form rather than have them manufactured. Up to now the English Board, and I believe the other Boards too, has taken the view that it is better not to reduce the price of milk to the public because the effect on consumption of a small reduction will be very little and will be adverse rather than otherwise in the interests of producers. I am very glad to note that in Mr. Bronson's paper this afternoon he makes a reference to that particular point; he showed that in their experience, much wider than ours, a small reduction in the retail price has very little, if any, effect on consumption. But a small reduction in the retail price necessarily has a very important adverse effect on the net results to producers, and therefore we are trying the other method of passing our milk over to consumption by these differential price schemes.

There are other important results from our scheme which I would like just to put before you. One of them of course is the way in which our scheme has standardized the results to producers all over the country. The scheme works in eleven regions, but there is very little actual difference in the net returns to producers in different parts of the country, so that the producer who has a farm near a consuming centre gets practically the same prices as the man who lives twenty-five miles away. Similarly, the man who lives near London, the biggest of all consuming centres in this country, gets practically the same gross return as the man who lives 200 miles away. In that way we have to some extent changed the outlook of those farmers, and of course changed proximity values and upset agricultural conditions generally. Further, we have already upset many farming systems in this country, upset them in a comparatively short period of time by the simple regulations of the Board. We have turned Devon, Cornwall, Wales, Westmorland, and Cumberland, indeed

the whole of western England and Wales, into districts where milk is sold for manufacturing purposes. That is going to have very serious repercussions on the balance of agriculture generally in this country. It may not be fully realized, but it was bound to come that those people who had small farms and were formerly engaged largely in butter-making and rearing stock have now become milk sellers in order to participate in the pool. When they become milk sellers they rear less stock and make less use of the by-products of milk. That has not been fully worked out in this country and has not had sufficient attention, but it is a direct, short-period effect of a milk marketing scheme such as ours.

The last result I would like to talk about is the increase in milk production in this country. The increase in milk production has come about partly because of the 12,000 or 14,000 new producers we have had to accept into the Milk Marketing Scheme. The scheme has had exactly the same result as Mr. Bronson has outlined to you—where a pool price is paid and a *certain* market found, immediately producers who have never sold milk before enter the market. In three years we have had about 14,000 of them. Notwithstanding the complaints of the low prices paid by the pool, more milk has actually come forward from producers already operating in the market. So that, generally speaking, we have seen an increase in the manufacture of milk products in this country in the last three years from about 125 million gallons in the first year to very nearly 250 to 300 million gallons in this year. I must qualify that by saying that that milk is not entirely new milk production, but is partly milk that was formerly used on farms and now finds its way to factories. But in spite of the talk of surplus milk in this country, we have still a comparatively small manufacturing industry; we make a little butter and a little cheese, some condensed milk and very little cream, but our manufacturing industry still only absorbs about 30 per cent. of the total milk output, so that we have a simple relationship of 70 per cent. of our milk sold to the liquid market and 30 per cent. to manufacturing. The returns of those two markets are pooled each month and the pool price paid to all producers.

Finally, I would put it to you that, as far as we can tell, our method of regulation in this country through the Agricultural Marketing Acts and the producer-controlled boards has been reasonably successful for controlling the market. But primarily, at any rate, we are concerned to develop and improve our marketing and to increase consumption, particularly with a view, as I said, to improving producers' returns.

C. G. McBRIDE, *Ohio State University, Ohio, U.S.A.*

I believe there are some very definite dangers that we must look out for in the matter of milk regulation. The first is the danger that we shall create a sort of vested interest on the part of certain groups of producers or certain groups of distributors, which will be maintained if these groups have enough political power to effect a continuation of the schemes. This may prove to be costly both to the producers and consumers in the long run, if there is no economic gain in maintaining those vested interests.

Secondly, the producers' co-operative movement as such may be weakened or its development delayed. The sharpest difference between the United States plans and the schemes in Great Britain is that our programme is largely one of voluntary producer co-operation. The effort to coerce the minority of non-co-operators who did not want to go along has not always been wholly successful, and, as Mr. Bronson pointed out, when it came to Court procedure in a great many cases the minority has been able to block the operation of plans through injunction or some other legal procedure. Our experience in one case in the Ohio State Supreme Court was that Court procedure does not move fast enough to take care of price situations. I think that is such a serious problem that it raises the question whether, under our present conditions and our type of legal procedure, compulsory co-operation or compulsory compliance on the part of all producers can be made to work. I have more faith in strong voluntary producer co-operation. As a corollary to this, our attempt to bring about complete compliance has resulted in bootlegging and racketeering to a considerable degree. It may be that this is a particular form of economic disease that does not prevail in the British Isles.

There is one other problem that it seems to me we are bound to face if we go too far in government regulation. We shall build up a machine of inspectors and supervisors and others connected with the supervision, which will become burdensome and distasteful both to producers and to consumers. I believe, from inquiries I have made here, that the boards in England and Scotland are doing their work with a much smaller force than is the case with most of our marketing plans in the United States. We tend in this sort of thing to create more jobs sometimes than are necessary.

I would not want those remarks to be construed as a belief that there is no hope in government regulation. I do feel, however, that there are some grave dangers that must be taken into account, and

those I have mentioned are the ones that stand out most clearly now in my mind.

I think the greatest problem in Great Britain is to find some way to bring manufacturing and liquid milk prices closer together. In our country the manufacturing interests that are buying milk for evaporating or for putting into the sweet cream markets in the east, as Mr. Bronson pointed out, are now bidding up to the point where in many cases these prices are not more than 25 to 40 per cent. below the price that has been offered for liquid milk. With this situation we have very little difficulty over the differentiation of fluid and manufacturing producers; in fact the producers for the fluid market are not being paid any more premium than is necessary to keep them in the fluid market.

My experience in government milk control has been in the State of Ohio, where our conditions are somewhat different from those described by Mr. Bronson for the Boston area. Our problems in Ohio were very slightly inter-State.

At first our farmers were sceptical of milk control, but later, when they became satisfied that the legislation recommended by the investigating committee was fairly sound, they fell in line, and I think it would be safe to say that the plan went into effect with the full confidence and support of the producers and a fair amount of goodwill on the part of the distributors. Our Board consisted of four men all appointed by the Governor. One of them was a producer selling at wholesale, one was a producer distributor, one was a distributor, and the other was the secretary of an association of grocery stores and meat markets, so that all types of distribution were represented. My job was that of executive secretary. I had no vote on the Board but was present at all the deliberations. Our experience was much the same as has been recited here by Mr. Davies. I think we succeeded in effecting a considerable stabilization of price; we checked the price-cutting orgy that was going on in the markets and brought about a considerable improvement in that respect. One of the greatest benefits came out of the large amount of discussion of the problem that took place in the vast number of hearings that we held. Each market area presented its individual plan, and we had sixty-eight such areas in the State. We also succeeded in introducing into the marketing of milk a somewhat better system of keeping records, recording classifications, and other business procedures. Our licensing system worked towards improved sanitation.

This legislation was passed early in 1933 to operate for a two-year period. At the end of the period the producers were satisfied with

this particular type of regulation, and while the distributors were not particularly favourable they were not vigorously against it. Some of our politicians, however, got the idea that what was needed was highly centralized State control through a Commission with power to fix prices without any direct participation on the part of the local group. They proposed a much more rigid type of control. The producers tried to reach a compromise, but after about three or four weeks of deliberation they failed, and when the Bill proposed by the politicians went before the legislature the producers' association threw all their influence against it and defeated it. The producers then in turn had the Bill they favoured introduced, and the politicians defeated it. The result is that we have gone on since July 1, 1935, with no regulation, and the producers' associations have been able, by working with the distributors, pretty well to control the situation. I think it is doubtful now whether we shall have any more legislation in Ohio dealing with price control until we come into another period of price demoralization.

RUTH COHEN, *Agricultural Economics Research Institute, Oxford.*

Mr. Bronson has said that his organization has been successful in paying the producers the highest possible price, and Mr. Davies that his has paid a remunerative price. I think every one would agree that they have achieved this end. What I want to consider is whether a policy of this sort is desirable, not only from the point of view of the producers, but also from that of the whole community.

I wish to discuss only two major aspects of the question, one, the price policy adopted, and the other, the possibilities of economies in operation. Can a farmers' board, compulsory or voluntary, provide the most satisfactory solution of these problems?

My remarks are mainly based on English experience, but will, on the whole, apply also in New England, though possibly not so much in the Middle West. For both in England and in New England a notable feature of recent years has been the large spread between liquid and manufacturing prices. Mr. Bronson apparently expects this spread to diminish, if not to disappear, in the United States. This may be possible in that highly protected market. In England, however, it seems unlikely that manufacturing milk prices can rise very substantially. The cost of producing milk products, such as butter and cheese, has fallen in the overseas exporting countries relatively to the costs of producing other products. It is unlikely, therefore, that the prices of butter and cheese will rise to the old parity with the prices of other products for some considerable time. For this

reason it appears to me improbable that the spread between liquid and manufacturing prices will disappear because of a rise in the world prices of manufacturing milk products.

The question therefore arises whether it is desirable from the point of view of the community to maintain such a wide spread. The only justification for doing so would be if the present level of prices were necessary to maintain the supply of liquid milk plus a 10 per cent. margin for safety in the period of the year of shortest supply. At the moment the margin is substantially higher, 30 per cent. in the shortest month; production has been increasing and shows little signs of diminishing.

It looks, therefore, as though the present liquid prices are high enough to maintain a 20 per cent. surplus above the needs of the liquid market. What this means, essentially, is that the consumer of liquid milk is being taxed to pay a subsidy to increase the production of milk for manufacture into cheese. Now, whatever may be the justification for subsidizing in some way the production of dairy products in this country, there can be no possible justification for financing this subsidy by a tax on the consumption of liquid milk which is a commodity of which consumption ought to be stimulated and of which the poorer classes already consume far less than is necessary for their health. For this reason it seems to me that, if the Milk Board is going to maintain the present price for liquid milk, there is a strong case for causing some other body to fix prices.

What are the alternatives to the maintenance of the present liquid prices? It would be possible both to lower prices and to maintain the present level of production if a subsidy were to be paid by the Treasury. This seems an improbable outcome, as the subsidy required would be large. The alternative is the reduction of the liquid price, and, if necessary, a decline in production. Mr. Davies has already discussed the effects of lowering the liquid price, but wholly from the point of view whether producers' returns would be increased. Every one would agree that a system of differential prices would be desirable at the present time if it increased producers' returns; but it is arguable, further, that it would be advantageous to reduce liquid prices, at any rate to the poorest consumers, even if, as a result, returns became unremunerative to the highest cost producers, and such producers were driven out of milk production.

Clearly a farmers' board is unlikely to adopt such a policy. Thus it seems to me that, so far as price policy is concerned, there is a very strong case for price fixing by some public body.

This case is strengthened when the possibility of economies in

distribution is considered. Everybody who has investigated the milk industry since the War has stated that the spread between the retail and the farmer's price for milk is too high, and has usually attributed this excessive spread to unduly high retailing costs. There are too many retailers to operate in the cheapest way; if, however, the spread were reduced, the smallest retailers would be driven out of business. So far, however, neither competition nor the Milk Board have succeeded in reducing this spread.

In another direction, also, distribution costs are excessive. Milk is still, to a certain extent, carried undue distances from one part of the country to another. The Milk Board, although they are working on the problem, have so far not succeeded in improving the position, and have probably worsened it. This is a minor point compared with the excessive retailing costs, but it also indicates the difficulties which a producers' board must face if it attempts to reorganize the distributive side of the business. It is therefore at least worth consideration whether milk could not be supplied to the consumer at lower cost and producers' prices be maintained, if some central body were to take over the distribution of milk.

J. LL. DAVIES, *Milk Marketing Board, London (in reply to discussion)*.

If there are no other speakers, I would ask for the opportunity to clear up one or two points which have been raised. Mr. McBride still prefers voluntary producers' organization, and prior to 1933 I was exactly in the same frame of mind. I have had some experience of producers' organizations on a voluntary basis. I have also had some experience of a producers' organization on a compulsory basis, and I must say that the producers' organization on the compulsory basis makes it much more easy to keep policy directed to improved marketing. For this country at any rate, with the compulsory basis we do not find such scope for boot-legging and racketeering as Mr. McBride suggests is possible in the United States, and this is not a feature which would deter me in recommending a compulsory rather than a voluntary basis.

The difference between the realization values of milk for different purposes is very wide in this country and rather narrow in the United States, because in the United States they have a fairly high tariff system and we have comparatively free trade. That probably explains Mr. Bronson's difficulties and their advice to us in this country to narrow this difference between the manufacturing and the liquid markets. We have no option but to sell our milk for butter-making at 4d. if the New Zealand farmer is able to produce that

milk at 4d., but in the United States they manage things much more happily in that way when they fix their prices and possibly their tariffs having regard to some extent to what the producers can afford to produce the milk at. Of course we do not regard the butter market or the cheese market in this country as of any real importance.

Miss Cohen made some points which I think I ought to comment upon. The first was that we were subsidizing the cheese industry at the expense of consumers. To some extent that is true, but, as I explained, the surplus in this country is comparatively small. It looks big at 300 million gallons, but after all it is a comparatively small quantity when calculated per head of the population of this country. If we are ever going to have a substantial increase in consumption of milk, the whole of that 300 millions will be wanted for the liquid market. That is at any rate one theory which can be put forward in defence of the surplus which we are now carrying.

The other point she mentioned, and I was particularly interested in it, was when she suggested that another organization than a producers' organization would do the work better, better in the sense of doing it in the public interest. I have often pondered on that point, but now I have very grave doubts as to which would be the better organization. I have had a little experience of public bodies, and we have, as a corrective on the Milk Marketing Scheme, a very important public body called the Committee of Investigation. The Committee of Investigation set up under the Agricultural Marketing Act, 1931, is a public body and investigates any act of the Board which might be deemed to be against the public interest. My own feeling about a public body is that when it tries to control an industry it tends to maintain all the interests, so to speak, as they were. I would say that a producers' organization—if it has the right point of view and aims not only at maintaining prices but also at cultivating and expanding the market—is likely to do more in real improved marketing and distribution than a public body which decides policy but has no part in organization or administration. We should probably have bigger margins for distributors and a more secure basis for all the redundant interests in the milk industry than we have even at the present time. At any rate that is my experience of public bodies in this country, even although in theory it might look as if a public body, looking at the problem impartially from a consumer's point of view, might rationalize matters. But our experience is, and I am sure it is in the United States too, that when a public body does take charge it has to listen to both sides or as many sides as there happen to be. All these sides can put up their cases so well, and it is so difficult

for people who are not technicians and who are not in the milk trade to know and to realize the whole truth of the matter, that what they do is in effect to maintain the *status quo*. We get no rationalization, no improvement, no extension of the market, which, I venture to suggest, a producers' body, full of courage and with the backing of producers and having their eye on the public interest as well, can bring about. So on the whole I have come down on the side of the producers' organization, with some public corrective, but handled by themselves, and having compulsory powers to handle all the milk and determine all the conditions.

W. H. BRONSON, *Boston, U.S.A. (in reply to discussion)*.

I would like to make just a few comments. First on the question of voluntary co-operative organization. As a matter of fact in our market it is not all voluntary, for the reason that we make contracts with our distributors whereby they agree to buy all their milk through our organization, and therefore all producers who are delivering to that distributor must become members of the association. Also in some cases, in fact in all cases, we make contracts with the distributors, whereby the non-members shall receive exactly the same price, terms, and basis of payment as a member. So there is no difference between the members' and non-members' payment. As to the prices that we receive for our so-called surplus milk that cannot be sold as fluid milk, that price is based on the price which we can get for our cream which is sold in the market. We manufacture practically no butter in our New England territory. Our price for surplus milk is based on the price of cream plus the value of the skimmed milk when manufactured into the various skim-milk products. The competition that we have to meet in cream-selling in Boston from our New England territory is the price at which some Western shipper in the Middle West is willing to put his cream into Boston market, and that in turn is determined by the butter price, because the question whether a shipper in Michigan will ship cream to Boston market or not is determined by what he can get for that cream if he manufactures it into butter and sells it in the Chicago butter market. So in many ways it may be said that our surplus price is based on the price of outside supplies of cream coming into our market. We have to meet that competition, otherwise we do not sell any cream, because we have wide open cream markets, different from New York in that respect.

This, of course, raises the whole question whether in the future we are to have price fixing or whether we are going to continue

to have a competitive system of price making. Are we to have a monopoly system of economy or a competitive system of economy? I have an idea that the farmers of New England would like the monopoly system of economy and the prices fixed and established for milk. As to the question of a central body taking over retailing, that has been discussed many times in our area. The argument is that, where we have five or six wagons going over the same street, we could cut the retail cost materially by having one wagon. But we must remember that the man on the wagon is the business representative of the distributor. He is the only contact the consumer has with the company, and if the company is to retain and build business it must have its own representative on the street handling its own milk. And therefore central retailing would not work except under conditions where there was a municipally operated milk plant, which as far as the producers are concerned would not be satisfactory in our area.

THE AGRICULTURAL SITUATION IN BELGIUM

G. BAPTIST

State Agricultural College, Ghent

THE predominant factor which has brought about the present economic situation in agriculture in Belgium is the devaluation of the franc in April 1935. The influence of this devaluation has been so preponderant that I propose to treat the whole question of the Belgian agricultural situation from the point of view of the problem of selling prices, costs of production, and their inter-relation. I am all the more inclined to treat this subject from this point of view, because I believe that all the economic ills from which we suffer must be attributed to a monetary origin, and the whole of the so-called causes of the crisis, over-production, under-consumption, difficulties of foreign commerce, &c., are mostly a consequence of the sudden drop in general prices which started in 1930.

The policy of deflation, which consists in lowering the cost of production to meet the fall in prices, ended in failure. After the two dry years of 1933 and 1934 and the continual slump in prices, the economic situation of agriculture in Belgium reached a crisis. The big farms, which were particularly hard hit by the low prices of basic commodities, exhausted their liquid capital. Even on the small rented farms where family labour is plentiful, it became difficult, if not impossible, to pay the rent. It was, above all, the low prices of the products of stock breeding which affected Belgian agriculture, of which 70 per cent. of the total output is animal products. Belgium is a country of small and medium farms (Table I) and livestock breeding is important especially where the land is poor.

In order to enable the foreign observer to understand the agricultural situation at the end of 1934, one must point out that Belgian agriculture, although very little protected, had managed to put up a reasonably long resistance to the crisis. It can only be explained by the fact that Belgian agriculture is thrifty and has generally an abundant supply of family labour. There was no indebtedness, and our country had already passed through a period of readjustment since the stabilization in 1926.

By contrast, two circumstances made the slump in prices all the more hard. First of all, Belgium is a densely populated country where the demand for fertile soil is great, which naturally results in

high rents. Second, cultivation is intensive in these parts, and cost of labour is necessarily high. Rents and cost of labour, which vary little, form a large percentage of the cost of production. For 18 holdings, in the environs of Ghent, the cost of labour represented,

TABLE I. *Area of Farms in Belgium*
(taken from the Census of 1930)

Size of farms	Number	Area in ha.	
		Total	Average per farm
Less than 1 hectare . . .	838,883	131,146	0.16
From 1 to 5 hectares . . .	194,914	520,115	2.67
5 to 10 „ . . .	56,311	413,415	7.34
10 to 20 „ . . .	27,882	397,821	14.26
20 to 30 „ . . .	7,010	173,138	24.70
30 to 50 „ . . .	3,656	143,205	39.17
50 to 100 „ . . .	2,026	142,491	70.33
Over 100 „ . . .	464	76,247	164.32
Total	1,131,146	1,997,578	..

on the average for the years 1932, 1933, and 1934, 34.3 per cent. of the total cost of production, and the interest on real estate owned by the holder and rents 14 per cent., making a total of 48.3 per cent. without counting the interest on the non-real estate capital investment.

In spite of an import tax of 10 francs per 100 kg. on wheat, barley, and rye, of 24 francs per 100 kg. on oats, of 8.50 francs per kg. on butter, and the quotas on horses, pigs, meat, and dairy produce, the decline in the price index from December 1929 to December 1934 was for wheat 60 per cent.; rye, 46 per cent.; oats, 47 per cent.; barley, 48 per cent.; potatoes, 25 per cent.; butter, 40 per cent.; eggs, 59 per cent.; fat cattle, 46 per cent.; pigs, 71 per cent.; horses, 11 per cent.

TABLE II. *Financial Returns of Seven Farms: Region of Ghent, Belgium*

	1932	1933	1934
	francs	francs	francs
Average gross output . . .	86,739.51	76,136.61	81,043.23
Average costs of production . . .	84,233.24	86,933.20	88,184.13
Profit or loss . . .	+2,506.27	-10,796.59	-7,140.90
Profit or loss per hectare . . .	+133.82	-576.50	-387.64

Seven agricultural undertakings in the sandy eastern part of Flanders, costed at the State rural economic station at Ghent, which we have been able to follow for several years made an average profit of 2,506 francs in 1932, a loss of 10,797 francs in 1933, and a loss of 7,141 francs in 1934 (Table II). Calculated per hectare these profits and losses amount to +134 francs, -576 francs, and -388 francs.

The devaluation had the effect of rectifying the balance between farm receipts and cost of production. The rise in production costs was not so rapid as the rise in farm receipts. The gap between the two, therefore, diminished gradually from April 1935 until November of the same year, but afterwards increased somewhat again as a result of a slight adjustment in production costs, a seasonal drop in certain selling prices, and a fall in the price of pigs (Table III).

TABLE III. *Index Numbers of Production Costs and Farm Receipts in Belgium (Belgian Boerenbond)*

(1909-1914) = 100

	<i>Production cost</i>	<i>Farm receipts</i>	<i>Difference</i>
	Index	Index	
1909-1914 . . .	100	100	..
1929 . . .	140	133	- 7
1930 . . .	131	115	-16
1931 . . .	122	94	-28
1932 . . .	112	76	-36
1933 . . .	98	70	-28
1934 . . .	94	67	-27
1935-January . .	91	66	-25
February . . .	89	62	-27
March . . .	87	59	-28
April . . .	65	47	-18
May . . .	64	49	-15
June . . .	65	52	-13
July . . .	65	52	-13
August . . .	65	54	-11
September . . .	66	56	-10
October . . .	66	59	- 7
November . . .	67	60	- 7
December . . .	67	59	- 8
1936-January . .	69	60	- 9
February . . .	69	59	-10
March . . .	69	56	-13
April . . .	69	56	-13

While in March 1934 the difference between the gold index figure of farm receipts and the gold index figure of production costs was -28, the gap was reduced to -7 in November 1935, and later increased to -13 in April 1936.

Amongst the principal farm products the prices of which rose most after the devaluation, special reference should be made to wheat and potatoes (Table IV). In comparison with March 1935, the prices, expressed in terms of the average of 1934, had risen to 77 per cent. for wheat, and 82 per cent. for potatoes. The price of rye increased by 19 per cent., the price of oats by 29 per cent., flax

by 20 per cent., and barley by 5 per cent. (Table IV). Obviously certain of these rises are greater than the mere adjustment to the devaluation, others are less, because during the period under review the world price of wheat rose, that of barley and flax fell, and the

TABLE IV. *Changes in the Price of Agricultural Products in Belgium since the Devaluation**

Products	Index of prices in per cent. of the average of 1934 (Seasonal variations not deducted)		Index of prices expressed in per cent. of the average 1927-1930 (Seasonal variations deducted)		Index of prices of the Belgian Boerenbond 1909-1914 = 100		Increase	
	March 1935	March 1936	March 1935	June 1936	March 1935	April 1936	Units	Per cent.
A.								
Wheat . . .	94	166	..	..	..	..	+72	77
Rye . . .	107	127	..	..	..	..	+20	19
Oats . . .	110	142	..	..	..	..	+32	29
Barley . . .	118	124	..	..	..	..	+6	5
Potatoes . .	88	160	..	..	..	..	+72	82
Flax . . .	132	158	..	..	..	..	+26	20
B.								
Butter . . .	..	..	64	74	..	..	+10	16
Eggs . . .	..	..	49	64	..	..	+15	31
C.								
Horses . . .	..	..	..	..	308	418	+110	36
Fattening cattle .	..	..	..	..	503	599	+96	19
Pigs . . .	..	..	..	..	369	562	+193	52

* In the case of butter, the price quotations used as the basis of calculation include the import tax; the index, therefore, does not correspond exactly with the reality.

potato crop was poor. The price of cereals includes the import tax mentioned above. This has not varied in proportion to the prices.

Among the live-stock products I would mention first of all butter and eggs. Allowance being made for seasonal variation, prices of butter and eggs were respectively 31 and 16 per cent. higher in June 1936 compared with March 1935. From March 1935 to April 1936 the price of horses rose by 36 per cent.; fat cattle by 19 per cent.; pigs by 52 per cent., though for this last it was difficult to determine how much of the changing prices was attributable to the devaluation and how much to the cycle.

Belgium is, above all, an industrial country where it is sometimes difficult to allow measures of protection for agriculture. Nevertheless, the Government took certain measures of light protection,

principally during 1933 and 1934 when the agricultural situation was most difficult. These measures may be summed up as follows:

- (a) Placing of import taxes (some of which have been referred to above) on wheat, rye, barley, oats, butter, potatoes, pigs, horse-flesh, lard, &c.
- (b) Fixing of quotas for export and import of eggs, pigs, cattle, meat, and dairy produce.
- (c) Paying of bonuses to the farmer, which amounted to 500 francs per hectare for wheat for the harvest of 1934, and 200 francs for that of 1935; for rye, barley, spelt, and meslin 200 francs per hectare in 1934, and 150 francs in 1935.
- (d) Imposing trade regulations; thus, for example, the responsibility of stating the source of butter placed on sale was introduced; it was forbidden to sell mixtures of butter from different sources; to add foreign matter to the milling of cereals; to manufacture or to import mixtures of manures or food-stuffs without a certificate of the Ministry of Agriculture; and so on.
- (e) Control of production of emulsified fats in order to prevent competition between those products and cream.
- (f) Propaganda for increasing milk consumption.

In practice, the import taxes and quotas often vary according to the economic situation and from time to time are temporarily suspended. Thus the quotas for butter, pork, beef, salted meats, and pork fat were decreased after the devaluation in 1935. The special tax on imports of lard was removed on August 23, 1935, and that on pigs on September 1 following. On November 1, 1935, the tax on imported butter was lowered from 6 francs per kilogramme to 4.5 francs for the rest of the year, and from January 1, 1936, the duty on imported butter was raised again to 6 francs per kilogramme. Meanwhile, this protection, although very light, was of great importance; the cereal duties helped the large producers of cereals, and the live-stock product duties, particularly butter, helped the smaller undertakings.

From the above remarks it will be seen that the position of Belgian agriculture has improved since the devaluation. It found itself in an exceptional position owing to the fact that selling prices increased rapidly, whilst the costs of production remained comparatively low. The farmer bought at favourable prices part of his seed, manures, and store cattle. He paid wages which were not yet influenced by devaluation. Consequently, he now sells with an abnormal margin of profit, or at a lower margin of loss.

Up to the present, therefore, devaluation has had a good effect, but we must wait some time to see what permanent good has resulted. Even if one day the present crisis passes, Belgian agriculture will never again pay, as has been the case since the War, a return on labour and capital equivalent to the returns prior to 1914. This situation results from the increasing competition in agricultural products which, since the War, the older continent has had to contend with from the new countries. In order to escape from this last difficulty, the principal solution is to be found in production of the highest quality. Unfortunately, progress towards products of the highest quality has been difficult in recent years, as, in order to produce them economically, it is necessary for selling prices to be high.

•

COMPULSORY SYNDICATES FOR REGULATING AGRICULTURAL PRICES

C. VON DIETZE

University of Berlin, Germany

GUSTAV SCHMOLLER has put as a motto at the head of his main work the words of Goethe:

Wer nicht von dreitausend Jahren
sich weiss Rechenschaft zu geben,
bleibt im Dunkeln unerfahren,
mag von Tag zu Tage leben.

The price policy in the international crisis of agriculture, the substance and consequences of which I have to deal with to-day, covers only three times three years. And yet the material which has to be mastered in order to give an account of what happened during that period is so comprehensive that one dare not undertake to do justice to the subject even approximately in an oral discourse. I have tried, therefore, to describe the manifold entangled facts in the book which I handed out to the Conference.¹ By that means I hope, having ploughed and harrowed the ground so far as to make it productive, the fruit which it shall bear will be a substantial knowledge of the analysed development and an idea of its consequences.

The compulsory syndicates or cartels which have been gaining ground in agriculture are, I believe, the most important trend of the events of the past decade. I use the term 'syndicate' in the sense in which German economic science applies it to define 'cartels of higher order'. With us, mainly those cartels are called syndicates which organize the marketing of products by a common trading office so as to make it impossible for the individual members to evade the price regulations. Wherever compulsion is exercised to form syndicates, that is to say where it is not left to the individual members to decide for themselves to join or to leave the cartel, it is regularly by the State or on its authority that the organization is carried through. Whether or not a majority vote of those participating is required is not essential for our purpose. It is possible also that special economic advantages granted by the State give such an effective inducement to join a cartel or a syndicate that, despite the juridical liberty, the *de facto* status comes very near to that of the compulsory syndicate.

¹ *Preispolitik in der Weltagrarkrise*. Berlin, 1936.

By laying emphasis on the compulsory syndicate, I believe I am making it more evident what the decisive changes in the marketing of agricultural products have been than if I employed the more usual and not very distinct expression 'planned economy'. It is not a new statement that in agriculture 'planning' inevitably results in the formation of cartels. Three years ago, Astor and Murray¹ stated that, in order to plan agriculture, one cannot think of any other type of organization coming into consideration at all than that of the cartel with its various degrees of possible control.

A review of the most striking features of recent years will prove this point of view. In this review we shall have to distinguish four periods: the pre-War, the War, the post-War depression, and the latest world agricultural crisis, which is the only one with which we shall have to deal in detail. In pre-War literature, the problem whether cartels are at all suited for agriculture was frequently discussed. At that time it was common ground almost unanimously that the immense number of farms concerned, their diversified production, and the dependence of yields on the changes of the weather did not make it advisable to form cartels in agriculture. The co-operative society as a marketing organization usually did not reach far enough to permit of calling them 'cartels', for it is the very basis of cartels that they include all possible producers in a given area in order to dominate markets. A co-operative sales society on the other hand cannot for the most part put into practice by itself such far-reaching aims, and operates in the market as one business organization among others. Only where—as in Denmark—the State indirectly compelled producers to join the co-operative societies by regulating the quality of exports, does the above-mentioned difference between the cartel and the co-operative society cease to be clear cut. A State commanding the participation in co-operatives virtually creates compulsory syndicates.

The organization of the War food administration created compulsory syndicates and State monopolies for the primary foodstuffs in many countries, but soon after the cessation of hostilities they were gradually abolished. The grain monopolies of Switzerland and Norway were preserved the longest of all.

During the years following the great depression of 1921, overseas exporting countries, Australia, New Zealand, South Africa, and Canada, were the countries which developed new organizations for the marketing of agricultural produce, partly following institutions which had been developed in war food administration. Australia kept

¹ *The Planning of Agriculture*. London, Oxford University Press, 1933.

up the Queensland sugar monopoly dating from War-time. Protected by the prohibition of imports, the total output of sugar is bought at fixed prices, and considerably lower prices are charged for all exports. In 1922 Queensland made legal provision to set up pools by majority votes for many more agricultural products and to leave all marketing to these pools. For butter, the Paterson scheme set up a cartel which succeeded in raising the home price and in subsidizing the export trade. New Zealand in 1921 set up marketing boards or a system of export controls for meat, wool, dairy products, and fruit, without being able to maintain a complete prohibition of private export. In South Africa also, from 1924 onwards, nobody but compulsory marketing boards was entitled to export fruit and wine. At that same date the Canadian wheat pool began to organize by voluntary organization about one-half of the wheat production and two-thirds of the exports. The co-operative sales societies which Denmark and Holland had developed for their most important high-grade products in pre-War days, to an extent and on the strict lines almost amounting to a syndicate, maintained their influence and even became more important.

Generally during the years before 1929 export controls with State aid were extended. At the same time direct export premiums had been introduced only in exceptional cases as in Australia, New Zealand, South Africa, and in Poland. Brazil and Japan have taken up valorizations with State aid for coffee and for silk and rice, valorizations which were to be found even before 1914. On the other hand, the import countries tried, only in exceptional cases and on a small scale, to develop supply regulations comparable to cartels. Where they do not concern the finishing industries, they are found chiefly with products difficult to transport, mainly with liquid milk, sugar beet, and vegetables, the supplying of which does not compete with supplies from very distant regions. Examples can be given from Germany, Switzerland, Austria, and Great Britain.

Since the outbreak of the last international crisis of agriculture, in the harder fight for outlets, export premiums have become, if I may say so, respectable. It does not seem to be quite honest that anti-dumping measures are still often fought for with a show of moral indignation. Furthermore, export controls were made more rigid and were more general. But primarily it was compulsory cartels and compulsory syndicates, price pegging, and State monopolies, which increased remarkably. In the beginning, as before 1929, the heavy weight of this development was in the export countries, because for the import countries it was still sufficient, for quite a

while, to fight the price fall by raising the traditional duties and in addition making compulsory the use of home products.

Among the oversea export countries, Australia under the pressure of falling prices introduced a new compulsory regulation only for butter. For the rest she has extended the subsidies for those products like wheat and dairy products, the export of which could no longer be sufficiently financed by taxing home consumption. New Zealand, since 1933, has amalgamated the wheat producers into a compulsory pool which will keep the home price above the price of the world market. Dairying has been subjected to a production control, and the marketing of dairy products in the home market is regulated by the Dairy Board; besides that all export and marketing controls have been amalgamated. The Canadian Government supported the Wheat Pools which had got into serious difficulties, and finally the Pools were replaced by a Wheat Board which has to pay minimum prices. Generally, the Canadian Government has, by the Natural Products Marketing Act, 1934, provided for the setting up of local marketing boards which are charged with the marketing or the marketing control of certain products. Apart from that Canada has provided for deficiency payments which are meant to subsidize unprofitable export and manufacturing. South Africa, whose agricultural production, owing to State aid, exceeded more and more the home demand, has generally granted export premiums and has amalgamated the producers into strict export and marketing organizations, especially for maize, dairy products, and meat; their members are partly compelled to export in order to raise prices in the home market. Argentina has committed the purchase of wheat, maize, linseed, and wine at minimum prices to special committees which to a large extent dispose of the receipts of foreign exchange, and has made way for organizing the selling of cattle and dairy products. In Brazil the defence of the coffee price has been transferred to the Federal Government, and they have gone in for a similar policy of valorization for sugar.

The best known and perhaps also the most important measures are those taken by the United States under the dominating influence of the Secretary of Agriculture, Mr. H. A. Wallace, ever since President Roosevelt entered upon office. The impulse to rationalize the marketing of agricultural products, which in 1929 was given by the Federal Farm Board, and the big purchases of wheat and cotton to which it had been forced, had not been sufficient to put agriculture on an equal footing with other industries and did not even succeed in banishing the danger of bankruptcy for numerous farmers and

banks. The Agricultural Adjustment Programme was built on a whole system of relief measures. Its duty was to give the farmers a fair share of the national income and to raise the purchasing power of agricultural products to the pre-War level. The State was entrusted with directing the necessary adjustment of production and demand; special producers' organizations and marketing boards were formed for its administration. The individual farmers were not forced by law, but they were induced by financial advantages to join the organizations. The advantages were granted only under the condition that production was restricted. The necessary means were raised by a comprehensive taxation of home consumption. Since the Supreme Court declared the raising of processing taxes for this purpose to be unconstitutional, the regulation of production has been carried on mainly for the maintenance of soil fertility.

The exporting Danube States were hit most severely by the price fall because it is vitally necessary for them to sell their cereal surplus remuneratively. They have tried to find a way out by export syndicates, pegging purchases, and State monopolies. But, with their lack of capital and the minor taxable capacity of home consumption, they could at most carry through only a part of their far-reaching purpose and only after having altered their plans in many ways. The scope of action of the Baltic States and Poland is similarly limited, but the bulk of their exports consists of live-stock products. Import monopolies and general marketing monopolies have been introduced mainly for cereals. The premiums for the most important export products—butter and pigs—have reached a considerable height. At the same time export control and the concentration of the export trade in corporations directed or privileged by the State have made very considerable progress.

Holland and Denmark, having been the first and the strongest in developing high-grade production in agriculture for the provision of the neighbouring industrial countries, have tried in different ways to take account of the growing marketing difficulties. Whereas Holland has fixed rigid quotas for the breeding of pigs, cattle, and poultry, has restricted the horticultural acreage, and has built up a comprehensive system for government direction of production and marketing, the Danish export committees mainly serve to distribute the quotas introduced by the importing countries. Only with cattle did the Danish State restrict the stocks, thereby getting rid of sick and useless animals, financing this intervention by a meat tax. The minimum price of butter, the introduction of which had been made possible temporarily by a levy, has been abandoned. As

a matter of fact in Denmark the general feeling still prevails against restricting free competition more than has already been done by the strong position of the marketing co-operatives, but in favour of proceeding with rationalization and the raising of quality. The Irish Free State has been pressed, mainly by the difficulties of export to Great Britain, to fix quotas and prices and at the same time subsidize her exports. Sweden, Norway, and Finland, on the other hand, the dairy production of which depends to a somewhat smaller degree on exports, interfered but little with free competition. In order to carry through their price policy they made use mainly of their well-developed co-operative societies, the efficiency of which was raised by subsidies and partly also by compulsory organizations.

In import countries before 1929 no government compulsion to organize marketing or even production could be found at all. In general, compulsory organizations were not used before 1933. The marketing order of the German Agricultural Estate has, in the first instance, to secure just and, if possible, stable prices and also pay regard to the consumer's position. But in building up its marketing organization it uses the form of compulsory cartels. In some parts of the industry where selling is reserved to special packing stations, we have compulsory syndicates in the narrower sense of the word. In general only prices and marketing conditions were fixed, whereas interference with production was rejected on principle. The price policy of Czechoslovakia shows a remarkable similarity only to particular measures of the Reich, i.e. in fixing quotas for the production of margarine and in regulating the milk market. From monopolizing grain, setting up a syndicate for cattle and quotas for breeding pigs, she finally came to strive towards a centralized direction of the total agricultural production.

It is especially instructive to watch the agricultural policy in Switzerland for protecting the peasantry. In 1929 the cereal monopoly was abolished, and instead the Federation made it its duty to take over home cereals at prices which greatly exceeded the world market price and to pay milling premiums for home consumption. Remunerative marketing of home production was guaranteed not only for cereals but also for eggs and timber, by making it compulsory for importers to accept offers. Cattle breeding and dairying are of decisive importance for the position of the Swiss peasants. It was here especially that the effective demand of the industrial population was reserved for the home producers to provide them with a sufficient income. For this purpose the marketing organizations which had already been formed voluntarily were developed into

compulsory corporations comprising every peasant producer; and no irregular competition is allowed to spring up from without or from within. Thus the prices of feeding stuffs were raised, and finally quotas were set up for milk supplies, for pig- and cattle-breeding, and thereby the former export surpluses of cheese and cattle were reduced. So the existing peasant holdings are maintained in such a way that the receipts from home consumption, dominated on the lines of a syndicate, are allotted to them. Countries exporting animal products, e.g. Holland and Norway, had to consider that kind of regulation first of all for wheat and liquid milk. In Austria its realization was limited by the fact that the country is poor and, owing to her foreign obligations, must rely on continuing her exports. Here, so far, it is only for live stock and dairying that comprehensive marketing regulations and subsidies have been carried through.

Great Britain also is aiming at maintaining her agriculture. The Ottawa Agreements have the *leitmotiv* that home production must be secured first of all and that only then shall a growing share of the imports into the United Kingdom be granted to the Dominions. It is not so difficult to favour home farmers by letting them have a share in the provisioning of the wealthy country, because their numbers are so small and their share in supplying home consumption is rather unimportant. The subsidies conceded to them, which benefit especially wheat and sugar production, therefore raise producers' receipts by higher percentages than they raise retail prices. Nevertheless a limitation of the wheat and sugar subsidies has been necessary to prevent home production increasing to a point where the consumers' burden would be too heavy. Cattle and milk prices are at present subsidized by the Treasury. Permanent subsidies on the lines of the wheat regulation are being considered as soon as the agreements concerning foreign trade will allow. The main point in high-grade production is the development of marketing schemes. The individual producers are amalgamated by majority votes into compulsory cartels and syndicates. This new order is expected to enable the British farmer in future to maintain his position in competing with the foreign producers. It is quite possible to imagine that the goodwill of the farmers to take part in market regulation, which has been common up to now, will weaken if their receipts are continuously raised by subsidies.

There are only a few among the well-known import countries which have not gone in for amalgamating agricultural producers on the lines of cartelization. Notably, reference should be made to

Belgium where, by reason of the close integration of agriculture with other industries and the predominance of the small farms, the incomes of different members of a family come from agricultural as well as from non-agricultural sources. This situation is opposed to a policy of confining the peasantry in an organization which is much like a medieval guild. Moreover, the repeated subdivision of land provides the incentive to make every effort in order to obtain a living for the family.

As can be seen from this survey, we cannot state that compulsory syndicates have already been formed or carried through everywhere for all branches of agriculture. But even where they do not exist the trend is moving towards them now. The existing free cartels and syndicates press for legal compulsion in order to do away with outsiders. The State for the most part can only carry through price fixing and run trade monopolies successfully if the producers are amalgamated; inside existing compulsory cartels it is often the aim and is even necessary to build common selling agencies in order to prevent a possible evasion of regulations. If, following Dr. Taylor's words, we want to throw light upon the road the men of action have taken, we have first of all got to put the question to ourselves, where does the pursuit of this path lead. This means in our case: what outcome would a totalitarian amalgamation of all agricultural branches into compulsory syndicates have? To-day I can only deal with this question in two aspects: (1) are compulsory syndicates a proper instrument for overcoming the economic depression? (2) can they in the long run harmonize with the social structure of agriculture which has prevailed so far, i.e. with family farming?

As long as freedom of trade governed, entrepreneurs and farmers of entirely different and even contradictory outlook worked alongside one another. Economic theory often takes into account only those who adjust their production to prices so as to increase supplies when the price level rises and restrict the quantities offered in the market when profits decrease. This reaction is called 'positive cyclical reaction'. It is nowhere possible on a universal scale, and it can only be imagined where the application of means of production can be altered without special difficulties.

Now, there are in many cases almost unsurmountable obstacles to altering and especially to diminishing capital, chiefly in the heavy industries, while in the family economy there is opposition to dismissing labour. An outstandingly high degree of use of fixed capital, as for instance in the mining and iron industries, makes it essential

to have a high degree of use of existing machinery, corresponding as far as possible to the working capacity. If, with falling prices, production should be restricted, the loss of the total invested capital becomes imminent. People are therefore inclined to go on supplying markets even if receipts turn out to be unfavourable, or they even increase supplies. That means 'anticyclical reaction' in order to reach again a balance between costs and receipts on a higher level of production when costs per unit are decreasing. For that reason the disturbed market is even more over-burdened, prices are cut, and difficulties in finding outlets are increased without eliminating eventually the less efficient enterprises. It is just in order to prevent such development that cartels and syndicates have extended in heavy industry. They follow a policy of stabilizing prices as much as possible and of diminishing their fluctuations, but yet on the whole must take account of positive cyclical reaction.

The family economy, by its very nature, is forced towards anti-cyclical reaction not by consideration of invested capital but in order to secure income and occupation for the family members whom one cannot throw out. High prices for the products may carry in their train a diminishing of effort, but, most important, a general fall of prices does not result in the least in a shrinking production, but far more on the contrary. Especially when urban economy is in distress, a larger number of people are herded on family farms. From this, the result up to now during times of depression has been an ampler provision of cheaper agricultural products. This prevented too big a cut of real income when nominal wages were being lowered, and over a longer period even partly set free consumers' revenue for other purposes. The whole expansion of world economy during the so-called capitalist-economic system, especially the opening up of non-European territories for settlement, was not carried through without the driving force of family economy, which took no reckoning of the capitalist conception of costs and prices. During times of stagnation the impulses for a new revival were by no means only the result of technical progress or completed commercial organization, but were the result of the anticyclical behaviour of family enterprises as well.

Not every compulsory syndicate, of course, will necessarily suppress all tendencies to make use in the original way of family labour. In times of favourable prices and markets capable of absorbing large quantities of goods, such a danger will scarcely become urgent at all. In the case of price falls the essence of a compulsory syndicate and the function attributed to it by the State result in preventing the

development by restrictions of production or at least by limitations of market supplies. If, for combating a price fall, minimum or fixed prices are decreed, the effect will be the same. In the event of these prices being higher than what they would have amounted to in the free market and in the event of people in fact adhering to them, part of the products will be unsalable, and enterprises burdened by such stocks must in the end restrict production, even though no special orders have been given. Whether it is opportune to form syndicates or to fix prices with State assistance does not depend primarily on economic forces but on the outlook of men. After all, the issue is whether they think it tolerable to leave their destinies to impenetrable marketing processes or whether they expect political power to direct and master the development. So the problem we have to deal with is preponderantly a social one, the problem of obtaining the individual's consent to be placed into a society, a community, the order of which is governed by the State. Whether, with falling prices, the striving towards an orderly restriction of production is reasonable from an economic point of view cannot be affirmed or denied in every case. It depends on the scope and the causes of the price fall.

With a lowering of prices, corresponding to the extension of technical and economic possibilities and kept within relatively moderate limits, a satisfactory equilibrium will return with comparative ease. Its return will take place in the quickest and most favourable way, if—as happened during the last quarter of the nineteenth century—the temporary frictions are not alien to the very being of a free trading economy. Under such conditions, consumers' demand, being capable of expansion, will by and by come into line with supply, aided by these very anticyclical reactions of important economic groups. Such a process may require decades, and numerous establishments may be destroyed, but the scale of destruction need not be extended so far that social ties are loosened. The forthcoming forces of revival will have the effect that new occupational opportunities will spring up for those who have been thrown out of their traditional jobs.

If on the other hand a price fall is connected with the dissolution of vital economic relations, if especially the moral foundations without which liberal policy cannot exist are shaken, an automatic recovery in the once usual way is not to be expected. The crisis will be so heavy and it will last so long that the social foundations of national life are endangered by the ruthless operation of anticyclical reaction. In such a case a selective process will promise almost no

economic advantages. Only by planning distribution of the occupational opportunities which survive and by regulative adjustment of the total supply to the remaining standard of demand, will it be possible to avoid irreparable destruction.

Thereby every possible means is put in operation for a positive cyclical reaction. Its general enforcement in private business life, if connected with a fair distribution of income, can prevent social mischief in difficult situations, but cannot guarantee to do away with stagnation either by itself or by international agreements. Planned restrictions of production cannot bring about a recovery by themselves, much less so if the dynamic tendencies of family economy are handicapped. Public investment becomes more and more important in order to offer sufficient possibilities for employment and to make way for increasing production. Whether in the long run such methods will turn out as fruitful as ampler provision of consumption goods, initiated by the combined efforts of the family, will depend on the character of the investments chosen.

It is by no means easy for the far-reaching activities of States carrying through enormous investments, creating and controlling comprehensive syndicates (necessary though they are for maintaining the social foundations of economic life) to avert economic troubles or even remove the dominating causes. In view of the heavy weight of established institutions, it is even to be feared that their vested interests keep on operating longer and more intensely than social security requires, and there is a danger that they may check the driving forces of a new revival and that they may end by stabilizing depression.

Therein we find our second problem set in the right light, namely, the compatibility of family economy with compulsory syndicates. Cartelization of family enterprises can be seen in substance if not in form in the medieval guilds, and the modern compulsory guilds of handicraft have often in fact acted like compulsory cartels by restricting their members in price fixing or in accepting customers, although it was forbidden by law. There is occasion for grave regret where the regulation interferes very deeply with the capacity of the family enterprises to develop. That, in the extreme, family economy must disappear is made evident by Soviet Russia which abolished by collectivization the independent peasant farms as being incompatible with Bolshevik planned economy, and has left but few functions to the family. As a matter of fact the fundamental problem for the Russian dictators did not consist in restricting agricultural surplus production, but in getting hold of the necessary amount of

cereal and other foodstuffs. During the War, that is to say during a time of specially high national requirements, the countries hit by food shortage conferred this duty on compulsory corporations. The State calling the family father away from wife and children to defend the country and claiming his whole life for the nation certainly could not leave the family economy untouched if it wanted to sustain itself in the fight. Its commandments were willingly followed, or at least endured, as long as everybody could understand that they were vitally necessary for the maintenance of the nation. But only with a great readiness to sacrifice—and even then only within bearable limits and not for a boundless future—can it be expected that rural families will put the requirements of the community in front of the care for the adequate nutrition of their own children and even for the feeding of their cattle. It is true that, even for a longer period, Government pressure may be so efficient that—as in Soviet Russia during recent years—people in the country starve, and even die of hunger, whereas a food supply is secured for the towns which is sufficient to prevent the worst. But that simply means the end of rural family economy. If it is expected that the starving of its children and the pining away of its cattle will continue to endure, it comes to an insoluble conflict with the official orders, and out of that can only result either the evasion and violation of the given instructions, or the destruction of the family economy.

It is not in the least necessary, however, when one is aiming at the reduction of a surplus supply, that every single application of compulsion should come into conflict with the vital foundation of the family economy. If, for instance, it is only the quality of the products offered by the family economy which is prescribed, or if the channels of trade—as, for example, the connexion with appointed dairies—are fixed, this need not lead to serious tension. Even the fixing of a quota for production will not endanger the very nature of the family as long as the total income is at least as high as to allow for the usual expenditures for the children and for the farm. Even where—as actually in Holland and Switzerland—the supplying of a very effective demand is reserved on the whole to the peasant farms, amalgamated and confined like in a guild, then such regulation may ultimately be felt to restrict the growth of the family, if there are no alternatives inside or outside the farms themselves in providing for numerous children. Cartelization and the setting up of quotas as a matter of fact do aim at raising producers' income by supporting prices despite decreasing sales. But whether this is successful depends on consumers' purchasing power from which it

is easy to expect too much if at the same time supply is universally regulated.

In 1930, before the German Cartel-Enquête, the agricultural experts stated just the same difficulties as in pre-War time against the formation of cartels in agriculture: the large number of producers concerned, the diversity of farming, the considerable differences in the quality of goods, and the incalculability of harvests. But up till now, as far as I can see, there is complete lack of reference to the important or even dominating position which family farming has in agriculture. As long as one had to think only of directing the supply to meet an ample and steadily increasing demand into regulated channels, there was no reason for the question whether cartelization is compatible with family economy. Perhaps the problem was discussed how it would be possible to fix reasonable prices where one cannot think of a capitalistic accounting of costs. But already in our day there are obvious cases where the impulse of family farms towards their maintenance and extension is beginning to struggle against compulsory cartelization, especially against the limitation of production or of salable quantities. This contrast becomes perhaps most obvious in the attitude of the native planters opposing rubber restriction. But in European countries as well, offences against set rules or attempts to develop one branch all the more when another branch of the farm is being restricted do not spring up from cold calculating profit-seeking, but from the ambitions of the family which, in the interest of its members, cannot stand too great a limitation of its income. The more numerous the offspring to be provided for, the less the family can do with a rigid restraint on income. As cartelization can be carried through only for each important agricultural product separately, the family farm in areas of diversified agriculture participates in a large number of compulsory organizations. If these, taken together, handicap the use and development of the family forces, the latter will seek for deficiencies in the existing order, and if these are not to be found there will be revolt against compulsory restraint.

A universal and lasting formation into compulsory syndicates, which is meant to restrict supply, will in the end jeopardize the very existence of family economy. That does not mean that radical destruction of family economy, as in Russia, must come about all at once. The family can adjust itself to the restricted possibilities of its development by distributing on its own part the reduced income to fewer participants, that is, by conscious birth control. Moreover, the moral bonds and perceptions hitherto powerful in family life might loosen. As has already been pointed out most

impressively in this Conference, the menace to the rural family arises from other causes than compulsory regulation of marketing or production. The menace is all the more urgent if disintegrating influences are to be felt from different sides simultaneously. With a contrast opening up between syndicate and family, it must be decided whether the marketing and production regulation is to be continued and carried through, or whether family economy and its original determining forces, especially the willingness to bear children, shall be maintained. This decision cannot be found by economic reasoning. Here as in all economic policy the main point is, what values are ultimately thought to be the most imperative for human action. In that, much depends on the place which is given—very emphatically indeed in Christianity—to the family, to its autonomous responsibility for the welfare of its members, and to the exhortation: *crescite et multiplicamini*. It cannot rest with us to take the decision on these ultimate problems. What we want is to make clear the results to which the development of our day is directly leading to when it is perfected.

HOW THE NATURAL PRODUCTS MARKETING ACT OPERATES IN BRITISH COLUMBIA

F. M. CLEMENT

Dean, Faculty of Agriculture, University of British Columbia, Canada

THE Natural Products Marketing Act (1934) is a Dominion measure. The Act functions in British Columbia by reason of the fact that the Provincial Legislature passed a similar measure known as 'The Natural Products Marketing (British Columbia) Act' (1934). The two Acts, Dominion and Provincial, taken together are designed to cover all the respective powers of both Dominion and Provincial Governments. Both Acts are necessary because of the three phases of trade: (1) intra-provincial, (2) inter-provincial, and (3) foreign. The marketing schemes that have been given effect to in British Columbia have been approved not only by the Dominion Marketing Board, but by the Provincial Marketing Board as well. The two Acts are designed to regulate and control the marketing of natural products.

In the event of the Natural Products Marketing Act (Canada) being declared invalid by the Supreme Court of Canada, and pending appeal to the Privy Council, the situation will be complicated. Such a decision, however, should not affect the operation of the British Columbia Act. An amendment to this Act, known as Bill 74, can be put into operation by the Lieutenant-Governor by Proclamation. Section 4, Clause 1, of this amendment reads as follows:

'The purpose and intent of this Act shall, from the time of the coming into operation of this section, be to provide for the effective regulation and control in any respect or in all respects of the marketing of natural products within the Province, including the prohibiting of such marketing in whole or in part.'

This amendment to the British Columbia Act also contains a price-fixing clause, whereas under the Dominion Act prices are made or fixed in an indirect way only.

The main complications that would arise should the Dominion Act be declared invalid would be due to the fact that it might not be possible to apply any important measure of regulation or control to exports; and some schemes are concerned primarily with exports.

Of the twenty-two marketing schemes (or codes) that have been approved in the nine provinces of Canada, eleven are in the Province

of British Columbia. Of the eleven schemes in British Columbia, eight have to do with farm products and three with other natural products. The eight (in chronological order) that have to do with farm products are:

British Columbia Tree Fruit Scheme.

Milk Marketing Scheme of the Lower Mainland of British Columbia.

British Columbia (Interior) Vegetable Marketing Scheme.

British Columbia Coast Vegetable Marketing Scheme.

British Columbia Hothouse Tomato and Cucumber Marketing Scheme.

British Columbia Small Fruits and Rhubarb Marketing Scheme.

British Columbia Sheep Breeders' Marketing Scheme.

British Columbia Beef Cattle, Beef, and Beef Products Marketing Scheme.

The three schemes that do not deal with agricultural products are:

British Columbia Red Cedar Shingle Scheme.

The British Columbia Dry Salt Herring and Dry Salt Salmon Scheme.

British Columbia Halibut Marketing Scheme.

British Columbia, the most western province of Canada, borders on the Pacific. The climate and rainfall are very varied. As a whole, the country is mountainous, not more than 10 per cent. of the total area being suitable for agriculture. Most of the farms are found in the river valleys, on the shores of the great inland lakes, and on the coast islands. Many of these farms have been made by one of three ways: by dyking and draining, by land clearing, or by the application of irrigation water. The exceptions to these three ways are found in the sheep- and cattle-grazing country of the interior, where bunch grass growth is natural to the rolling plateaux. In terms of national or world figures, the agriculture of British Columbia is of small importance, the production in recent years being only about \$40 million annually. (Fishing, \$15 million; Forestry, \$44 million; Mining, \$42 million.) In terms of relative intensity and progress in recent years in production and marketing it compares very favourably with any country of the world. (The total population is about 700,000—this is an increase from 50,000 in sixty years. About 40 per cent. of the total population are classified as rural.)

Farming is typically capitalistic in its organization. That is, its products are produced primarily for sale in domestic or foreign markets. There is but little farming of a 'self-sufficing' nature. While it is considered sound policy to advocate the production of

as many commodities as possible on the farm for home consumption, and while this is done to a large degree, it is nevertheless true that the farmers are thinking primarily in terms of grading, packing, and standardizing their products and merchandizing them on modern lines. They are interested in wages, interest, and profits. While the farm house is the home of the farm family, it is also true that the house and the farm are a place of business.

It is quite largely because of this capitalistic and business point of view that marketing and marketing legislation play such important parts in the agricultural economy of British Columbia.

Previous to the introduction of the Natural Products Marketing Acts (Dominion and Provincial), British Columbia experimented with two other Marketing Acts: (1) the Produce Marketing Act, 1928, and (2) the Dairy Products Sales Adjustment Act, 1929. These Acts were the forerunners of, and were similar in objective to, the present Natural Products Marketing Acts. Both were ultimately declared by the courts to be *ultra vires* of the Legislature of the Province. Both Acts were originally put on the statute books at the request of farmers' organizations.

The backgrounds I have mentioned, while not complete, will nevertheless give some understanding of the reasons for the interest in marketing legislation.

Though eight schemes under the 1934 Act have been approved and all are mentioned in the pages that follow, no one is described in detail. Only sufficient information is given to indicate how the schemes operate. It should be kept in mind that a scheme applies only to named commodities and only to these commodities in so far as they are produced in an area or territory defined in the scheme or code. Milk, fruit, and tomatoes may all come from the same area, but still be marketed under different schemes. Organization is either by commodity, or by commodities that are similar in nature.

The strength of the Act, in the judgement of the speaker, lies mainly in its local application. That is, any group of producers of any natural product in any area defined can work out a scheme for themselves. The scheme may be practicable for them when it might not be practicable for another group producing the same commodity in another province. If the scheme as presented meets with the approval of the Dominion and Provincial Boards, it can be given the force of law. The initiative can be taken by groups of producers, and, if a reasonable number are in accord, the law makes it possible for them to act together.

The British Columbia Tree Fruit Scheme deals mainly with export.

The total salable production of fruits in the area defined under this scheme has amounted to somewhat more than 4 million boxes annually during recent years. Of this number of boxes the domestic market, i.e. the Canadian market, can absorb about 60 per cent. more or less, depending on the production in the other provinces of Canada, market demand, &c. The Canadian protective tariff amounts to approximately 42 cents for a box of apples weighing 50 pounds. In recent years, during that part of the season when Canadian markets could be supplied from home production, no fruits of the kinds produced in Canada have been allowed to enter Canada. Canada, then, for a certain season of the year, has become a closed market in so far as importations of foreign products are concerned.

Because this scheme deals mainly with a product that is sold outside the Province, and partly outside the Dominion, the Board administering the scheme draws its powers largely from Dominion authority.

The market under control is the domestic or Canadian market. The aim of the Tree Fruit Board is to regulate the quantity and quality flowing to the domestic market in such a way that the demand will always be met. Price must not be advanced to too great a degree and, on the other hand, must not temporarily or seasonally be depressed to a point where the growers do not obtain all that the market will pay. While the Board endeavours to regulate the flow to the domestic market and consequently not to over-supply or under-supply any part of it, the product comes into competition with similar and other products from other parts of Canada. Thus, while internal competition between and among growers is reduced to a minimum, competition between and among provinces is interfered with only to a limited degree, if at all.

The organization for purposes of administration is as indicated in Figure 1 on the next page.

The Provincial and Dominion Marketing Boards referred to in the diagram are three-man Boards appointed by the respective governments. These men are civil servants selected because of their special qualifications for the work. The Tree Fruit Board is a three-man Board elected by the registered growers from among their own number. This Board, that is, the Tree Fruit Board, acts for the Dominion Board and carries out the regulations in so far as the powers of the Dominion Government extend. This Board also acts for the Provincial Board and carries out the regulations under the scheme in so far as the jurisdiction of the Provincial Board extends. The Tree Fruit Board thus draws its powers from two sources. It is

hoped in this way to avoid conflict of Dominion and Provincial authority within the Board. The Tree Fruit Board, not the Dominion or Provincial Board, is the active body in the regulation of the marketing of the product. It regulates, but it does not buy or sell.

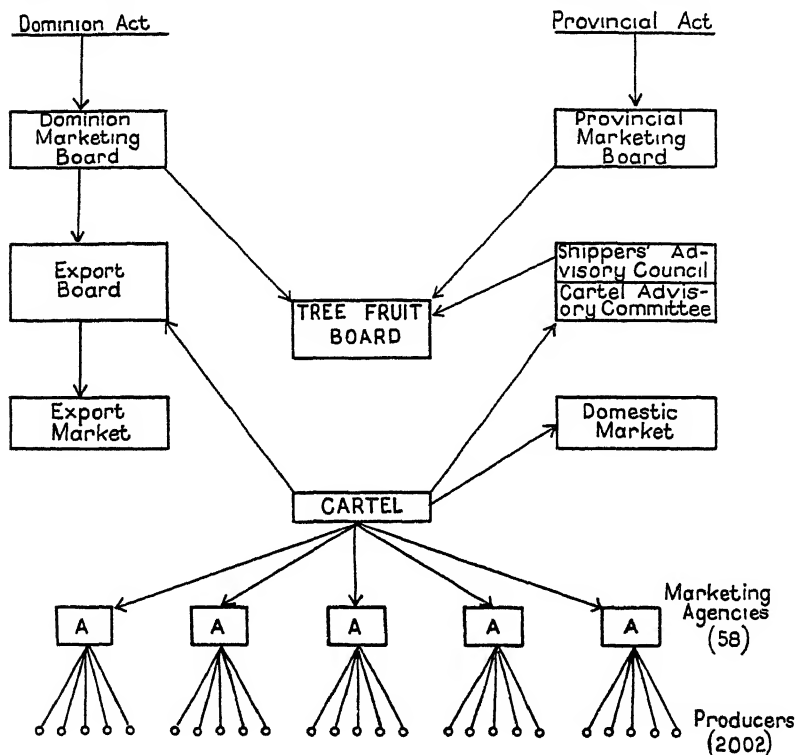


FIG 1. MARKETING ORGANIZATION FOR TREE FRUITS IN THE OKANAGAN VALLEY, 1934-5.

The agencies referred to in the diagram are shipping or selling individuals, companies, or associations. These number more than fifty. The Tree Fruit Board regulates the marketing agencies. In this way competition is not discouraged, but at the same time it is not permitted to result in mutual frustration. It is carried out under a code of ethics that tends to put all competitors on an equal basis.

From the above it is obvious that the purpose of the Board is to maintain prices at a reasonable level in the domestic competitive markets.

The Board works on the principle that a market on which the price is falling distributes less than a market on which the price is rising. Consequently an attempt is made to set an opening price that

can be advanced as the season progresses. Also, a low price at the opening is no incentive to further price cutting. The Board, after consultation with the Shippers' Advisory Council, names the minimum price at which the various varieties and grades are to be pooled. It then permits a percentage release on a named date. Second, third, or further releases are made when, in the judgement of the Board, the market situation is favourable. The Board has no power to compel the agencies to abide by the price recommended by the Board. Neither has it the power to prevent any agency from holding back on each release because of the belief that prices will rise. So far, however, these two considerations have given little trouble. The price named by the Board is the price at which the various varieties are pooled. The Board also places on the shipper the onus of seeing that his products are properly stored. Compulsory inspection by a Dominion Government Inspector is required of all shipments. Shipments can be made only to the brokers or jobbing houses designated by the Board.

Some of the general regulations under the Board are as follows:

- (a) Each shipper is required to deliver to the Board an estimate of the volume of each product to be marketed by him during the season.
- (b) Each shipper, or other person marketing or otherwise disposing of a product, is required to apply to the Tree Fruit Board for a licence. Shipment of tree fruits by any shipper without a licence is prohibited.
- (c) No product can be delivered by a grower for marketing to any shipper, broker, or other person not holding a licence from the Board.
- (d) True invoices covering all products marketed in Canada must be mailed to the Board within 24 hours of the time of the shipment of the product.
- (e) Each shipper is required to authorize in writing any railroad or other agency transporting the product to furnish the local Board any information required by it in respect to the movement of any product, and to send a copy of such authorization to the local Board.
- (f) The local Board determines the amount of storage, transportation, handling, brokerage, and other charges, or any losses through shrinkage or dumping, that are to be assumed by the pools.
- (g) Each shipper pays to the Board a specified sum per box or crate for the purpose of establishing an equalization fund.

- (b) Every shipment in car-lots or in motor-trucks must be inspected by a Dominion Government Inspector and a certificate covering such inspection must be obtained by the shipper.

The following is quoted from the first annual report of the Board. The quotation indicates one of the weaknesses in the scheme.

'While the Board is convinced that its operations during the past season have been of real benefit to growers, and that they can be of much greater benefit in future seasons, its members are unanimous in the belief that, in the fact that the marketing of British Columbia fruits is handled by a multitude of shippers, lies the greatest weakness in the whole marketing structure. If the growers are ever to get all that they are entitled to for their efforts, the Board believes that this can only be realized through a great reduction in the number of shippers operating on the markets.

'It was therefore with great satisfaction that the Board viewed the result of the vote recently taken by the British Columbia Fruit Growers' Association which showed that eighty-seven per cent. of those voting were in favour of a reduction in the number of shippers. The Board took no part in the argument on this question prior to the taking of the vote, as it felt that its mandate from the growers was to administer the scheme agreed upon, and that it should continue to do so until the growers should indicate their desires otherwise. The result of the vote is taken by the Board as instructions from the growers to do everything in its power to bring about the result aimed at.'

It is difficult to estimate the value of the Board to the industry as a whole. The growers, however, are confident that regulation of marketing is essential if they are to obtain full advantage in the markets.

Under the scheme or code, the Tree Fruit Board is elected by the registered growers annually. After one year of operation all members of the first Board were returned. Out of a total of 2,002 registered voters, 1,756 ballots were cast. Out of this number the Chairman of the Board received a total of 1,520. At the end of the second year of operation all members of the retiring Board were re-elected by acclamation.

This industry seems definitely headed towards fewer selling agencies, more definite regulation, and in the long run, in addition to regulated marketing, possibly even a planned and regulated production.¹

Under the *Milk Marketing Scheme of the Lower Mainland of British Columbia*, the Milk Marketing Board draws most of its powers from the Provincial authority. It is concerned with the marketing of

¹ For information on the Fruit Export Control Scheme of Canada, of which British Columbia is a part, address Canadian Horticultural Council, Ottawa, Canada.

milk and milk products in an area commonly described as the Tuberculosis-free Area around the metropolitan area of Greater Vancouver. The area from which milk can readily be drawn is limited. Additional supplies can come only from the adjoining islands, the inland area of British Columbia, or from the United States. The area contains only about 3,150 registered milk producers and produces about 8½ million pounds of butterfat annually. About 5 million pounds of this come from A and B grade farms, which farms alone, under the regulations, can participate in the fluid market. Of this amount the fluid trade takes approximately 3·6 million pounds of butterfat. The product from C grade farms and unclassified farms can be sold only through other channels. The farm grades A, B, and C are set out in the regulations under the British Columbia Milk Act.

The administrative set-up is practically the same as for fruit, previously described. The Board makes rules and regulations, but does no marketing. The product is sold to the distributors through three agencies; the Fraser Valley Milk Producers' Association, a co-operative with about 2,600 active members; the Independent Milk Producers' Co-operative Association, with about 280 members; and the Milk Shippers' Association, Ltd., with about 200 members. Each of these agencies is a corporate body. They can buy and sell.

The Fraser Valley Milk Producers' Association, in addition to supplying a large distributing company in which it holds a substantial financial interest, operates a condensery and a utility plant for the manufacture of powdered milk, butter, and cheese. The other two agencies are not equipped to manufacture large quantities. Nearly all of the surplus from A and B grade farms is manufactured by the Fraser Valley Milk Producers' Association.

The Marketing Board has no power to fix prices. The three agencies, however, can and do name a price at which they will sell butterfat to the distributors. The price agreed on for this year was 53 cents per pound of butterfat. The Board has power to and does fix the spread between purchase price and resale price. This spread varies according to the butterfat content, the size of the container, in bulk or bottles, to householders or hotels, &c. The resale price is consequently supposed to be a uniform price for all distributors.

Up to the present time little restriction has been placed on one other group of dairy farmers, those known as producer-vendors. These operate Grade A farms, bottle the milk on the farms, and supply individual routes in the city. There are now about 200 farmers distributing milk in this way, and their number is increasing.

Each agency pools its product within its own agency, but there is no pooling among the agencies. Because of this, the agency doing the manufacturing of surpluses from A and B grade farms pays its members less per pound of fat than those agencies that sell practically all of their product on the fluid market. This has led to bitter controversy and is one of the very serious weaknesses of the scheme. Pooling among the agencies has not been given effect to even though the scheme permits it.

There are other weaknesses in the scheme also. It has been found that, while the spread in cents has been adhered to in so far as distributors are concerned, there is a tendency to put a little more cream in the milk bottle. Competition leads to the 'sweetening' of the bottle of milk. Also, another weakness is found in that two of the agencies do not handle the milk physically and may not even see it. It goes direct to the distributor, and the distributor reports the tests and the weights sold for various purposes. Consequently, the agencies become, to quite a large degree, distributor-directed and -controlled agencies, even though theoretically they are producer-controlled. All milk should be handled physically by the producer-controlled agency if the producer is to control in fact as well as in name.

When the scheme went into effect the farmers were receiving from 33 to 44 cents per pound of butterfat from the distributors. The scheme gave them 53 cents for that portion which went into the fluid market. On this basis it is estimated that the 3,150 producers received an additional \$500,000 during the first year of operation.

As provided in the code, the registered producers were asked to express their desires with regard to the men whom they wished to represent them on the Board. This was done by ballot, and the nominees of the Co-operative Association received substantial majorities.

At the same time the producers were asked to vote on two other questions:

1. 'Are you in favour of the Provincial Milk Marketing Scheme of the Lower Mainland of British Columbia?' The answer was in the affirmative by 1,246 to 92 against.
2. 'Are you in favour of the designation of a single agency through which the regulated product shall be marketed?' The answer was in the affirmative by 1,042 to 277 against.

The producers are about four to one in favour of more rigid regulation and control. They also favour a single agency. More bitter controversy has centred around this theme than any other, and the

controversy centres fully as much around personalities as around the principle of regulation and control.

The British Columbia Coast Vegetable Marketing Scheme is designed to regulate the marketing of vegetables other than hothouse tomatoes, cucumbers, and rhubarb in the defined area. The area is the Lower Mainland and adjoining islands. The scheme may be described primarily as a local one, and, though all coarse vegetables are handled, the main crop handled is potatoes. Cauliflower, lettuce, beets, turnips, and cabbage are of some importance, but are regulated for export outside the controlled area only. Potatoes are controlled within the area. The controlled market is the consuming area, including the coast cities, Vancouver, Victoria, and New Westminster.

At the time of writing, the area contains 2,262 registered growers made up as follows: 1,475 white, 470 Chinese, 273 Japanese, and 44 Hindus (East Indians). The 5,295 registered acres were divided as follows: 3,061 operated by white growers, 2,033 by Chinese growers, 90 by Japanese growers, and 111 by East Indians. For purposes of administration the area is divided into nine districts. Each district elects a delegate and these delegates in turn elect the Board—three in number. The election is by ballot, and each delegate has one vote for each registered producer in his district. In this scheme 'producer' is defined as 'any owner of one acre or more of land in the area, upon which land the regulated product is grown for sale'. This wording practically excludes one nationality from voting rights. The Chinese are seldom owners. Four hundred and thirty-six of the 470 Chinese growers cultivate land under lease.

The Board is now in its third year of operation. Two members of the first Board, which was the organizing committee, did not continue after the first year. The personnel for the third year of operation is the same as for the second. This Board operates through a single agency. This agency in turn sells to wholesalers at stated prices for the various grades. The prices vary from week to week and month to month. The wholesaler's spread is fixed at \$3 a ton when potatoes are quoted for less than \$20, and \$4 a ton when potatoes are quoted for \$20 a ton or over. This cannot be enforced absolutely, especially on a rising market.

In order to meet competitive requirements, buyers have been demanding potatoes from individual growers. In order to meet this, dealers are permitted to buy up to 60 per cent. of a grower's quota if the potatoes grade Canada No. 1 and the price paid is the price set by the Board. If it is found that rebates are being demanded, the Board has power to cancel the dealer's licence.

The individual growers are required to submit an estimate of tonnage to the Board. An estimate is made of probable demand in the controlled area. Each grower is then allotted a quota. The growers' estimates of tonnage are checked by an inspector of the Board. For instance, the Board's order under Quota No. 26 reads as follows: 'The Board's agency is now ready to receive shipments on Quota No. 26. This quota will be based on tonnage reported by our inspector following his survey. Growers who in past quotas have exceeded allotments in proportion to tonnage yet to be marketed will not participate in this quota, but will have to wait till their allotment quota is ready.' If growers deliver more than their quotas these additions are not paid for till later pools are closed.

Only two grades, Canada No. 1 and Canada No. 2, are permitted to be marketed. All potatoes must be sacked in clean sacks and bear the special tag of the registered grower. The tags are destroyed as used. The potatoes must be transported in licensed carriers or trucks. A farmer who has his own truck may be licensed to transport. As the product is delivered to the warehouse of the agency it is examined and, if not up to grade, is marked down by a Dominion Government Inspector. One of the orders of the Board reads something like this: 'Don't ship potatoes in dirty sacks. It is better to have a good grade No. 2 than a poor grade No. 1. Don't blame the Board if the Dominion Inspector checks your potatoes below Grade A or turns them down for hidden diseases.'

Growers may sell supplies of potatoes to merchants in their nearby towns provided the individual grower arranges with the Board for the proper tags.

A schedule of charges is clearly set out by the Board. All returns are pooled weekly in the early season and monthly during the main season. It is not possible to keep potatoes from other districts out of the controlled area. The Board under discussion, however, has a working arrangement on prices with the Interior Vegetable Board. The two Boards can and do work together to mutual advantage. The Coast and Interior Boards come into competition with each other in other provinces. The competition is, however, on a basis of quality and service.

Although there have been at least 200 prosecutions under this code, at the time of writing there are no cases pending. The principle of regulation seems to have been established.

The control exercised by this Board was materially strengthened by the 1936 amendments to the Provincial Act. To the usual definition of marketing, 'buying and selling, shipping for sale or storage

and offering for sale', have been added the words, 'and in respect of a natural product includes its transportation in any manner by any person'. This permits of a close check being kept on all truck movements. Other amendments need not be discussed here, except to add that now 'if the accused person pleads or alleges that the natural product was not produced in the area to which the scheme relates, the burden of proof thereof shall be upon the accused person'.

The British Columbia Hothouse Tomato and Cucumber Marketing Scheme operates in a manner similar to the other schemes. The Board regulates marketing in the coast cities and exports to other provinces. It operates through a single agency. All producers, agencies, and dealers are registered with the Board. All of the product must be marketed through the agency except when exemption is granted for local retail. All retail sales by producers must bear a stamp indicating that a local sales permit has been issued. The boxes containing the produce are stamped with the date and number of the grower as delivered to the agency. All crates, empty or otherwise, found in use anywhere must bear the stamp of the Board showing date of delivery. Wholesalers can purchase only from the agency. The Board has power to examine books and generally check the activities of all its members and all handlers of the product. Licences can be cancelled by the Board.

The two following orders have been relatively effective in checking bootlegging:

'Any hothouse tomatoes or cucumbers being transported or marketed contrary to the orders of the Board shall be subject to seizure and shall be delivered to the agency of the Board to be sold.'

'Every dealer (wholesaler) who holds a certificate of registration from the Board shall issue a counter sales slip or invoice with every sale of hothouse cucumbers or tomatoes and every retailer or pedlar shall produce such counter sales slip or invoice upon request of any member, official or servant of the Board.'

The Board has established its own grades, but receives considerable assistance from the Dominion inspectors.

White men and Chinese are working together quite harmoniously in this scheme, and a prominent Chinese is a member of the three-man Board.

The British Columbia Interior Vegetable Marketing Scheme operates in a way similar to the British Columbia Coast Vegetable Marketing Scheme previously discussed. It is a similar scheme in a different section of the Province. Its marketing is done through an agency designated by the Board. At the present time a member of

the Board has been designated manager of the agency. Its purpose is to eliminate undesirable buying and selling practices which are detrimental to those engaged in the industry. The Board conducts a pool for the equalization of returns and co-operates with the Coast Marketing Board.

The British Columbia Small Fruits and Rhubarb Marketing Scheme, though approved, is not in operation. Varied conditions of production, conflict of personalities, and disinclination to compromise are obstacles that have yet to be overcome by this group of producers.

The British Columbia Sheep Breeders' Marketing Scheme is not fully under way. The problem to be dealt with in this case is one caused by imported products. The set-up for administrative purposes is similar to that for the schemes described. There is, however, one fundamental difference between the problem to be solved in this case and the problems being faced in the schemes described. Whereas in the schemes described the problem is to deal with surplus, in this case the problem is to deal with the steady inflow of the product from an adjoining province. It has been obvious from the outset that local control cannot be expected to function adequately without some control over the product coming into the controlled area. Beyond doing some useful work in grading, little can be accomplished pending further consideration of the control of imports.

The British Columbia Beef Cattle, Beef, and Beef Products Marketing Scheme has not been put into operation. As in the case of sheep and lambs, British Columbia is a deficit area, the products in this scheme and quite large imports come regularly from an adjoining province. Consideration is being given to the regulation or control of the imported product.

The three schemes that have to do with natural products other than agricultural, namely, the British Columbia Red Cedar Shingle Scheme, the British Columbia Dry Salt Herring and Dry Salt Salmon Scheme, and the British Columbia Halibut Marketing Scheme, are not discussed here. The principles of operation are very similar to those of the schemes discussed. These schemes have to do mainly with export outside of Canada. They aim to encourage co-operation at home and to discourage consignment to foreign markets. Stabilization of price is the ultimate objective. Unlike the schemes in agriculture, these schemes have been given little publicity. They have been approved and put into operation without general argument, discussion, or advertisement.

Since this paper was written the Supreme Court of Canada has declared the Natural Products Marketing Act to be invalid, and the Lieutenant-Governor of British Columbia has proclaimed Bill 74, an amendment to the Natural Products Marketing Act (British Columbia). The Province of British Columbia has appealed from the opinion of the Supreme Court of Canada to the Privy Council.

While there is some organized opposition to regulation and control in marketing, public opinion as a whole seems to be definitely in favour of adequate support for the farmer in his endeavours to market his produce at a reasonable price. In my judgement, regardless of the many legal complications that arise from time to time, the farmers will continue pressure for adequate marketing legislation.

GOVERNMENT REGULATION OF PUBLIC UTILITIES IN THE UNITED STATES

M. C. BURRITT

Public Service Commissioner, State of New York, U.S.A.

OBVIOUSLY, this is too vast a subject to do more than sketch in a brief address. I shall therefore attempt to indicate only the extent of regulation in the United States—Federal and State—and to present what I regard as some of the essentials in effective regulation. Perhaps also it will be useful to point out some present trends, indicating the status, progress, and problems of public utility regulation in the United States.

This discussion necessarily presupposes a knowledge of the political organization of the United States under its constitution. All regulation in the United States may be considered as (1) Federal, or *inter-State*, that is, concerned only with the regulation of utility service which extends across State lines; and (2) State, or *intra-State*, which has to do with the regulation of utility services within state lines only.

Government regulation of utilities in the United States began with the regulation of railroads and has extended in most instances to the other services mentioned. The most recent to come under regulation are inter-State bus and truck service, radio, utility holding companies, and, in certain States, water companies.

The year 1935 was marked by a great increase in powers of Federal departments over Federal utilities, their affiliates, and holding companies. In 1934 Congress created the Federal Communications Commission (F.C.C.) transferring to it the powers of other Federal departments relating to wire and wireless communications and enlarging Federal administrative control over these companies. Among the powers thus conferred was that of prescribing systems of accounts to be used by the various companies under its jurisdiction. In the electric field Congress has extended the powers of the Federal Power Commission (F.P.C.) over electric companies and has charted an entirely new course in relation to holding companies under the Securities Exchange Commission. Very few, if any, States have attempted to bring holding companies under the jurisdiction of State commissions, except in so far as they are particularly involved in the affairs of local operating companies. It would

obviously be impossible for a single State to supervise the operations of holding corporations which may and do extend over several States.

Intra-State regulation, being by forty-eight States, is naturally variable. Its extent and effectiveness depend largely upon the wealth and population of the State and the extent of the public utility companies serving it. Regulation consequently varies from nominal, or perfunctory supervision, collecting statistics, &c., to rigorous and complete supervision. Practically all of the States regulate railroad and electric service. Most States regulate gas, telephone, and bus service. A fewer number of States regulate water and steam service.

Perhaps some of you may wonder, as I did, why this subject was placed on the Conference programme. The President, Mr. Elmhirst, partially clarified the purpose in his opening address. Taking electricity as an example of a public utility, we find that on the economic side its use, as a labour saver and a convenience, is growing very rapidly in this mechanical age, while on the social side there is hardly a single factor or commodity which has as much possibility for adding comfort and conveniences to the farm home, or freeing it from so much household drudgery, as central station electric current. So, with the rise of agriculture to the dignity of business and to higher standards of living, electricity has become one of the essentials of the rural occupation and rural living. Much the same may be said of the telephone, of local bus service, and of other services.

It is my view that rigorous regulation by government of private business should be applied only in the case of monopolies. Public utilities are generally essential monopolies. Lest the attitude of many American farmers be misunderstood, I take this opportunity to say, as one of them, that we do not believe in the attempted control of agriculture in the United States whether in the name of agricultural adjustment or of soil conservation.

I shall discuss the regulation of private utility monopoly as such, rather than as applied solely to rural areas, because I believe that the principles to be applied are the same as to urban areas. Although I know that it has been done in some countries, I believe that it is a mistake to separate service to the urban communities from that to rural areas, first because they are necessarily so closely inter-related in their other common community interests, and secondly because the sources of supply and transmission and distribution are and ought to be common, forming a part of an integrated whole. The segregation of rural areas tends to increase the costs of service to them and leads to government subsidies as in the

Province of Ontario, Canada. The reasonable inclusion of adjoining rural areas with cities and villages tends to simplify distribution, to reduce costs, and to equalize rates; and it avoids government subsidies.

Following this policy in New York State we have been able to establish rates for farmers which are substantially the same as those in cities and villages, except in the lower brackets of consumption where minimum guarantees and slightly higher energy rates have been found necessary to cover the higher unit costs of distribution due to less density of population. These minimum bill guarantees are not effective where consumptions at usual rates exceed them, which is usually at 30 to 50 kilowatt hours of use, and, since the average use of energy on farms is larger than in urban domestic use, the guarantee is exceeded in the great majority of cases. What I shall say as to regulation, therefore, applies equally to rural and urban use.

Since plans for extending rural lines are so diverse in the United States, I shall not discuss them here. It should be said, however, that in New York State approximately 40 per cent. of the farms have central station current; 21,000 rural customers have been added during the past year, and within another year fully one-half will be served.

I have been a member of the New York State regulatory commission for six years, so, because of the familiarity with the situation which the practice of regulation in that State has given me, in the discussion which follows I shall use New York State as an example.

New York State was one of the first to begin the regulation of public utilities. As it is one of the most populous and wealthy States, regulation there is perhaps more advanced in scope and effectiveness than in many other States. Otherwise, the history and function of State regulation in New York are more or less typical of those in other States.

Aside from some regulatory control of railroads, a comprehensive public service law was first passed in New York in 1907 when Charles Evans Hughes, now Chief Justice of the United States, was Governor of the State. Regulation of public utilities in the State is, therefore, now about thirty years old.

The functions of the New York State Commission are set forth in the Public Service Law. They include the regulation of all public utility operations as to (1) rates and service; (2) prescribing of uniform systems of accounting; (3) approval of local franchises and plant construction; (4) authorization of the issuance of all securities; (5) investigation of complaints and accidents; (6) tests and inspections of gas and electric meters and railroad equipment; (7) elimination of railroad crossings; (8) valuation of utility properties.

Its functions of supervision and regulation are applied to the following public utilities: (1) railroads, including street railways; (2) common carriers, including buses; (3) electric corporations (including municipal); (4) gas corporations; (5) steam corporations; (6) telephone and telegraph corporations; (7) water corporations (except municipal).

The Commission has a staff of approximately 350 employees and an annual budget of about a million dollars. It regulates about eleven hundred separate utilities having a total fixed capital of several billion dollars. The Consolidated Edison Company of New York alone claims \$1,200 million of fixed capital, and the New York Telephone Company, \$750 million. The Commission is also authorized to assess costs of certain investigations against utilities up to one-half of 1 per cent. of their gross income, and to employ special accountants, engineers, and other experts in these investigations. Of these we are employing probably about 100 additional persons. Among other things, the activities of this Commission have resulted in reduced rates to the extent of about \$100 million in the last six years. That is, the rates of 1936, applied to the consumptions of 1930, would produce \$100 million less than would the rates which were in effect in 1930.

The essentials of effective regulation are of course many in detail, but those which it seems to me desirable to discuss on this occasion may be grouped as follows:

1. Service.
2. Original cost records.
3. Systems of accounting.
4. Issuance of securities.

1. *Service.* Provision for adequate and permanent service, uniform by classes, non-discriminatory in character, amount, or price, and charged for at simple rates, is the first essential of all regulation. After such service has been provided for on a permanent basis, then its cost should receive consideration. Provision is made in the New York law requiring investigation of either rates or service by the Commission upon the complaint of any municipality or of twenty-five consumers. However, it is my conception of the duty and functions of a regulatory commission that it should not wait for the filing of complaints to investigate, but through examination of the properties, records, and services of the companies a Commission should be ever alert to the needs and the possibilities of better service and lower rates, and whenever necessary should commence proceedings on its own initiative. The New York Commission has followed

this policy and, as its record shows, has initiated large numbers of formal investigations on its own. In addition to these more formal investigations there are, of course, thousands of informal investigations (8,094 in 1935) of individual or minor complaints in which the Commission is able to secure adjustment satisfactory to both customer and company by conference or correspondence.

2. *Cost of Service.* A principal aim of the New York Commission has been to establish on the books of the companies as rapidly as possible the original cost of the properties used and useful in rendering utility service to the public by various corporations. To accomplish this end it requires that the original cost be related to the inventory of property in such manner that it will be kept up to date by the addition of new construction and the subtraction of property retired. This is called a continuous property inventory. Another objective is to determine the accrued depreciation and the annual rate of depreciation of the property upon the basis of original cost. Many rates are fixed and agreed to by the utility companies upon this simple and generally fair basis—original cost less depreciation.

However, our law, as interpreted by both the highest State and United States Supreme Courts, provides that the utility companies are entitled to earn a fair return on the fair and reasonable value of their properties used and useful in rendering public service. This does not mean that a fair return—perhaps 4 to 6 per cent. under present conditions—is guaranteed on the fair value of the companies' property. It simply means that, if competitive conditions and circumstances permit, a company must be permitted to earn such a reasonable rate of return. To put it in another way, a company cannot be prevented by a Commission from earning a fair return upon the fair value of its property, if it is able to do so.

Naturally, rate proceedings occupy a great deal of the time of the Commission. This is required principally to determine the fair value of a company's property. The basic rule for determining fair value of utility properties was laid down by the United States Supreme Court in a case known as *Smyth v. Ames* (169 U.S. 466-546). This decision requires the Commission to consider all the following facts in determining a fair value:

Original cost of construction.

Amount expended in permanent improvements.

Amount in market value of bonds and stocks.

Present as compared with original cost of construction—reproduction cost.

Probable earning capacity under particular rates prescribed by statute.

The sum required to meet operating expenses.

No court, however, has ever determined, except for particular cases, what relative weight should be given to these various elements which go to make up fair value. Here is, then, wide latitude for the judgement of the Commission.

In the past the Commission has found it necessary to spend a great deal of time in determining the original cost of company properties because of the absence of adequate original cost records. This has led the Commission to require the keeping of continuous property inventories priced at original cost. Once these are established and kept up to date it is not necessary to repeat the time and expenditure required to ascertain such costs. Much current progress is being made in setting up these permanent records.

The determination of the cost of reproduction is a phase of rate proceedings which requires a great deal of time and expense. Naturally enough, perhaps, the companies employ many professional witnesses to show reproduction costs and to fight hard to support those claims, which are usually high. This has compelled the Commission to require its staff also to present reproduction cost studies on behalf of the public, which are usually considerably lower than these of the companies. From these two studies it is usually possible for the Commission to arrive finally, after much cross-examination and argument, at the theoretical cost of reproducing a property as required by the courts.

The subject of depreciation and the methods by which depreciation should be calculated is one about which there is great dispute, and which requires much time to ascertain correctly. The New York Commission has prescribed the straight-line method of depreciation, but this is not accepted by the companies, and the State courts have held that the Commission cannot require the companies to keep their books upon this basis, although it has not been held that this method of computing depreciation may not be used in rate proceedings. The companies prefer to use the observed depreciation method. Results arrived at by this method are, in the opinion of the Commission, usually inadequate. Many companies do not have over 2 or 3 or 5 per cent. of their fixed capital in depreciation reserves, and a number of the best companies consider that 10 or 12 per cent. of fixed capital in a reserve for depreciation or retirement is adequate. The Commission sometimes finds as high as 30 or 40 per cent. in electric and 50 or 60 per cent. in gas properties.

Other important matters which must be investigated and determined are:

- a. Whether or not proper *retirements* have been made both as to units and costs of these units. In other words, it is necessary to find out just how much of the property which is on the Company's books is actually used and useful in providing service to the public and to make certain that property not used or useful is removed from the fixed capital on which the ratepayer is expected to pay a return, and at proper amounts.
- b. *Overheads* placed by the companies on their books, and whether or not any of these overheads are arbitrary and do not represent proper charges or actual expenditure for necessary overheads.
- c. *Intangible items* for which no expenditure has been made. In the case of most of the older companies large items of intangibles and of intangible fixed capital are found, and these are the subject of much testimony and argument. Although it is seldom found upon the books of the companies, claim is always made for what is called 'going value', which is generally claimed by the companies to be 5 to 10 per cent. of the total fixed capital.
- d. *Write-ups* by means of reproduction appraisals or original-cost appraisals used to supplement actual costs. In a few instances companies have on their books not the actual original cost of their properties but the estimated appraised costs which are sometimes as much as double the actual original cost.

Since a study of all of these matters requires a great deal of time, especially in the case of large companies, which results in delay, a final decision of the Commission sometimes requires as much as two or three years. To remedy this delay the New York Legislature of 1935 authorized the Commission to fix temporary rates upon the basis of original cost less depreciation. In order to meet the requirements of the courts as to a return upon the fair value of a company's property, a paragraph was added to this law, which provided that any demonstrated deficiency in earnings which might be incurred as a result of the fixing of such temporary rates must be permitted to be recouped by the company through the rates which are finally fixed at the close of the proceeding. The companies carried their opposition to this law to the highest State courts, but in July 1936 the New York State Court of Appeals handed down an all but unanimous decision affirming the law as constitutional.

The other elements involved in determination of rates are more easily measured. The keeping of proper records and accounts of

revenues and expenses is comparatively simple. However, the Commission finds it necessary to scan some of the expense accounts of the companies very carefully to determine whether or not certain of the expenses are proper, particularly contributions and dues in various organizations; and also whether or not administrative expenses, especially salaries, are unduly large or improper.

3. *Systems of Accounting.* The prescribing of uniform systems of accounting is a matter of vital importance in efficient regulation of public utilities. After the broad principles of regulation have been established, then regulation becomes a matter of efficient supervision of detailed entries in fixed capital on the books of the companies, proper retirements, and correct keeping of accounts of revenues and expenses. The New York Commission has long had such systems of accounting in effect on electric and gas and railroad utilities, and has recently prescribed new systems for water and omnibus companies. Some of the vital questions which are covered in these systems of accounting, are

- (a) the keeping of a continuous property record, already referred to;
- (b) the pricing of this property at actual cost;
- (c) the setting up of proper unit prices for groups of property;
- (d) the retirement of these units of property at these unit costs;
- (e) proper provision for annual depreciation and accrued depreciation.

These are only a few of the most important. There are many more. Our uniform system of accounts for electric corporations, for example, comprises a book of 173 pages.

Another important requirement is the keeping of fixed capital, revenues, and expenses, by municipalities or areas. This is required so that, with some allocations of general overhead items, it is possible to determine whether or not a given municipality or given area is being charged too much or too little for service.

Expenses are required to be kept in the following groups: (1) production, (2) transmission, (3) distribution, (4) administration and overhead, (5) taxes, (6) depreciation or allowance for retirements. Of course each of these groups is broken down in more detail. By comparing these group costs among different companies it is possible to determine readily whether or not a particular company's costs are unduly high, and if so the reasons therefor.

A large staff of engineers to inspect property and accountants to check the companies' books is essential if such a system of accounts is to be made effective. The New York Commission endeavours to

check the fixed capital records of the companies periodically, and also in connexion with rate proceedings, and to check the revenues and expenses more frequently.

4. *Issuance of Securities.* Under the New York law no securities, even notes—unless they are for a period of less than one year—may be issued by public utilities without authority of the Commission. The Commission's authorization of securities is based on the original cost of the fixed capital of the company, less adequate reserves and earnings.

In many of the older utilities there is a good deal of fixed capital which was not carefully scanned at the time it was entered on the books of the company, including intangibles, write-ups, and unallocated amounts already referred to, and against which, unfortunately, securities have in some cases been issued. Since it is impossible to recall these, refunding must be done upon the basis of actual securities outstanding, though with protective requirements. However, when the securities are retired, or mergers are effected, the Commission exercises great care that no such items are authorized and that the amount of securities actually issued does not represent more than the fair cost of the property less proper depreciation.

The Commission believes that adequate but not excessive reserves and surplus should be provided by the company.

As a result of the greed of many public utilities during the boom years of 1928 to 1930, and their unwillingness to reduce rates, the public in the United States has come to believe that most public utility rates are excessive. Consequently, there has been a rising tide of sentiment not only for reductions in rates, but for public ownership. The Federal administration has capitalized this public feeling by entering into such Federal undertakings as the Tennessee Valley Authority (T.V.A.) project.

There is little doubt that most public utilities of the United States were permitted excessive earnings up to 1930 or 1931. Their greed ran away with their common sense. Subsequent investigations and a new level of prices have clearly indicated that many of these rates are too high. There was a further belief on the part of the public, which was more or less justified by the facts just stated, that regulation was ineffective. Therefore, the Federal Government and many of the State legislatures have recently tightened the laws regulating public utilities, increased the appropriations and the personnel of commissions, and in many ways have greatly increased the possibilities of effective regulation.

Not satisfied with this, a large percentage of the public have in-

sisted upon utilizing the threat of competition. Under the pressure of public opinion the Legislature of New York, for example, has authorized municipalities to undertake the generation and distribution of electricity and gas under favourable conditions. In addition the Federal Government has advanced sums of money as loans and subsidies to build such plants. This threat of municipal competition against the utilities has been fully as effective on domestic and small commercial rates as is the threat of competition of private plants in industry and among large individual consumers. It may be unfairly used in some cases, but utilities invited it by their attitude.

Between these threats of municipal ownership on the one hand and more effective regulation on the other, the public utilities of the United States have been compelled to change their attitudes and rates materially. As I have already indicated, the rate reductions ordered and negotiated by the Public Service Commission of New York State, for example, have amounted to more than one hundred million dollars.

On the whole I believe that regulated private ownership of public utilities is a more effective method than public or municipal ownership. Municipal ownership is open not only to the possibility but in many instances the probability of political interference and to the inefficiencies which arise as a result of such interference.

In closing I should like to emphasize one final point, especially commending it to the consideration of those who favour the method of municipal ownership of public utilities as opposed to their regulation as private monopolies. By the very nature of the situation municipal ownership almost always begins and usually ends in the cities and villages. Of fifty-six municipalities furnishing their own electric service in New York less than one-fifth furnish this service to the adjoining rural areas, and of those who do serve farms less than one-half do it as cheaply and effectively as the regulated private companies. In fact it is my experience that, particularly in the case of the smaller villages, the municipalities are generally inefficient in furnishing electric service and need supervision fully as much as the private companies.

Perhaps naturally enough, but after all selfishly, a municipality is interested principally in service to its own citizens. It has to be urged and persuaded to serve the contiguous farming areas outside. It is more difficult and often more costly to set up rural service independently. It should be a part of the total area service. When the private companies are deprived of their most profitable business, i.e. that in the more thickly populated centres, by municipal plants which do

not serve the open country, the cost of service is increased, and the rural rates have to be raised. Thus municipal ownership frequently results in a disadvantage to farmers, even when it is to the advantage of the urban area served.

In my opinion private ownership of operating utility companies, at least in the United States, not only lends itself to adequate service at low rates, if properly regulated, but to the necessary inter-connected network of transmission and distribution. But effective supervision and administration can only be secured by proper legislation, sufficient appropriations, and a competent staff which is permitted to function without political interference.

The value of regulation, therefore, as a method of obtaining adequate and satisfactory utility service, depends almost wholly on it being made fully effective. Unfortunately, too much regulation is inadequate and ineffective. I believe that the regulation as practised in New York is producing the desired results.

•

RELATION OF CHANGES IN MEAT PRODUCTION AND CONSUMPTION TO CHANGES IN FARM INCOME FROM LIVE STOCK IN THE UNITED STATES

PRESTON RICHARDS

Bureau of Agricultural Economics, Washington, D.C., U.S.A.

A STUDY of the relationship between the changes in volume of meats produced and consumed and the changes in cash farm income from live stock involves several considerations. Among these are: first, factors that determine changes in retail prices and retail expenditure (aggregate retail value) for meats; second, factors affecting changes in the total volume of meat produced and consumed; and third, changes in relationship of meat prices and live-stock prices as well as the influences responsible for such changes. It will not be possible in this discussion to cover in detail these several factors, but attention will be given to the most important aspects of the problem.

Changes in the aggregate consumer expenditures for the commercial meat supply correspond closely with the changes in national income in the United States. Although national income in the United States is only a rough measure of consumer purchasing power or the demand for meats, it appears to be the most adequate measure available.¹ It will be observed in Fig. 1 that the annual changes in these two factors in the post-War period were nearly always in the same direction and were usually in about the same proportion. Similarly, it can be shown that the changes in total consumer expenditures for each of the two most important kinds of meats, pork and beef, are also closely related to the changes in national income. Thus it appears that the principal factor responsible for changes in retail expenditures for meat is the change in incomes of consumers. It follows, therefore, that the chief forces affecting retail meat prices are the changes in national income and the changes in the volume of meats consumed.

In the United States the total consumption of meats is determined largely by the total volume of meats produced or the aggregate

¹ The index numbers of national income used were based upon the estimates of national income for the years 1909-29 given in *America's Capacity to Consume*, a publication of the Brookings Institution, by Leven, Moulton, and Warburton, and upon estimates of national income published by the Department of Commerce for the years 1929-35.

slaughter of live stock. In the main meats are perishable, and they must be moved into consumption channels within a very short time after the live stock is slaughtered. Since exports and imports of meats are not large in relation to total meat production, the consumption

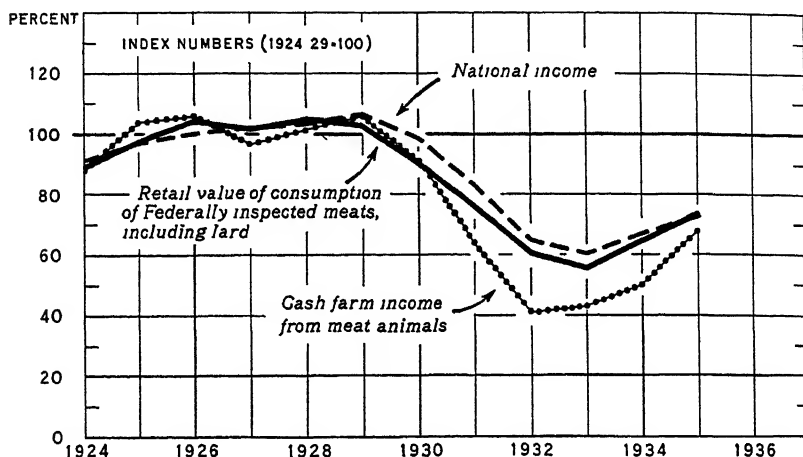


FIG. 1. RETAIL VALUE OF CONSUMPTION OF FEDERALLY INSPECTED MEATS (INCLUDING LARD) AND NATIONAL INCOME, AND CASH FARM INCOME FROM MEAT ANIMALS, U.S.A., 1924-35.

or disappearance of meats in any year is determined primarily by meat production in that year. The close relationship between production and consumption of Federally inspected meats and lard in the years from 1921 to 1935 is indicated in Fig. 2.

That the total commercial production and consumption of meats in the United States have been stable in most of the last 15 years is also shown in Fig. 2. This is especially true of meat consumption. In the 12 years from 1923 to 1934, the variation in production from the high point to the low point was 12 per cent.; and in that period the greatest deviation from the 1923-34 average was 8 per cent., and, in 9 years of the 12, production deviated from this average by less than 5 per cent. In the 1923-34 period the range of variation in consumption from the high point to the low point was only about 5 per cent. In 11 years out of the 12 in the period from 1923 to 1934 the deviation in the apparent consumption of Federally inspected meats from average was less than 3 per cent. Both production and consumption were reduced materially in 1935 because of a curtailment in feed production of about 50 per cent. resulting from the severe drought of 1934. Meat production under Federal inspection

in 1935 was 23 per cent. less than in 1934, and consumption of Federally inspected meats in 1935 was reduced by 17 per cent. In view of the severity of the drought of 1934 it is somewhat surprising that these decreases were not considerably greater.

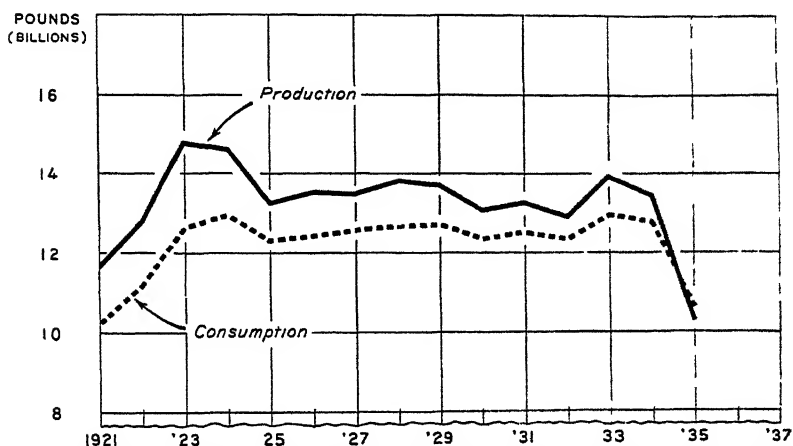


FIG. 2. PRODUCTION AND CONSUMPTION OF FEDERALLY INSPECTED MEATS, INCLUDING LARD, UNITED STATES, 1921-35.

The marked stability in total meat production, however, has been accompanied by material changes in the meat production from individual species of live-stock. In the period from 1923 to 1934 the dressed weight of Federally inspected hog slaughter at its lowest level was 21 per cent. smaller than at its highest level. In 5 years of this 12-year period the deviation in hog production from the 1923-34 average was greater than 9 per cent. In the years from 1923 to 1934 the dressed weight of inspected cattle slaughter at its lowest level was 25 per cent. smaller than its highest level, and in 5 years of the 12 the deviation from the 1923 to 1934 average was greater than 7 per cent.

Throughout the post-War period there has been a decided tendency for decreases in hog slaughter to be offset in considerable part by increases in cattle slaughter and likewise for decreases in cattle slaughter to be counterbalanced by increases in hog slaughter. Since meat production from cattle and hogs represents more than 90 per cent. of the total meat production, the offsetting tendency mentioned accounts largely for the stability in the total commercial production and consumption of meats already discussed.

Since the changes in the aggregate retail value of meats consumed in the United States in the post-War period were closely related to

changes in incomes of consumers, whereas the volume of consumption was relatively stable, it follows that most of the changes in retail prices of meats as a group have been associated with changes in consumer incomes, or in demand. For individual kinds of meats, however, the changes in the volume of consumption have been sufficiently large to cause material changes in retail prices.

Studies of the relationship between meat and live-stock prices indicate that the changes in retail meat prices resulting from changes in supply or in demand, or both, usually are fully reflected in prices received by producers for live-stock. That is to say, a change in the retail price of meats obtained from 100 pounds of live stock usually is accompanied by an approximately equivalent change in dollars in the price per 100 pounds of live stock. On the other hand, a given percentage change in price of a particular kind of meat or of all meats usually results in a percentage change in prices of live animals as sold by producers which is considerably greater than the relative changes in retail prices of meats.

With aggregate consumer expenditures for meat being affected principally by changes in consumer incomes, it would appear that a given percentage change in the supply of meat available for consumption results in an equivalent but inverse change in retail prices for meat. Since the margin between live-stock prices and meat prices tends to be relatively stable, or at least is not affected materially by changes in the volume of meats handled, it follows that a given percentage change in the supply of live-stock for slaughter would result in a greater percentage change in live-stock prices than in meat prices. With the unit margin between live-stock prices and meat prices remaining relatively constant, the total marketing charges for live-stock and meats are greater when the quantity of meats consumed is large than when it is small. Hence, the total value to producers either for all live-stock or for an individual species usually is greater when the supply is small than when it is large. This is especially important for a particular kind of live-stock such as cattle or hogs, since, as already pointed out, the variations in production of beef and of pork are considerably greater than for all meats combined. It is also important to note that producers of cattle frequently are not producers of hogs, and vice versa.

The tendency for the aggregate value of live-stock to decrease as the supply marketed increases is illustrated in Figs. 3 and 4 which show the chief factors affecting hog prices and cattle prices in the United States. In Fig. 3 is shown the relationship of changes in hog prices to changes in slaughter supplies of hogs, changes in national

income, and changes in export demand¹ for hog products for the period 1923-33.² It will be observed that the variations in the three factors last named are closely associated with the changes in hog prices. In section D of Fig. 3 is shown the inverse relation of changes in the total value of hog slaughter to changes in the volume of such

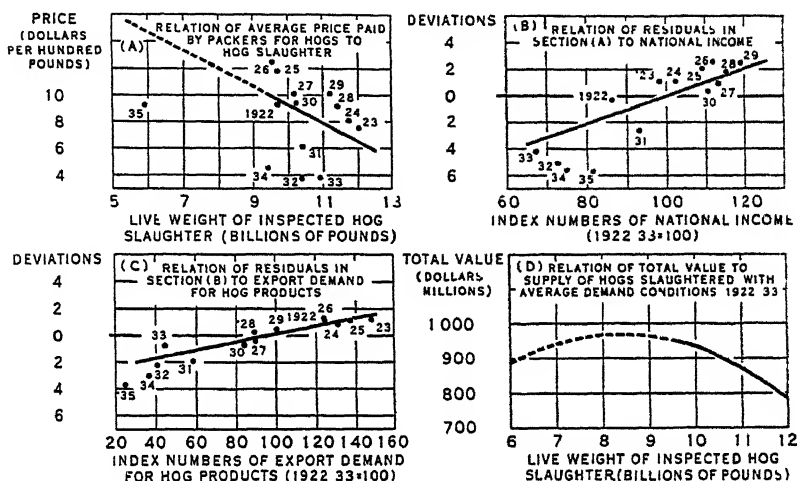


FIG. 3. HOG PRICES RELATED TO INSPECTED HOG SLAUGHTER, NATIONAL INCOME, AND EXPORT DEMAND FOR HOG PRODUCTS, U.S., 1922-33

[In sections A, B, and C the years 1934 and 1935 are not included in the analysis, as a processing tax on hogs was in effect in these years, but not in earlier years]

slaughter, with domestic and foreign demand at average levels. It appears, however, that after supplies of hogs are reduced beyond a certain point further decreases result in declines in the total value of supplies, but in only one year of the post-War period, 1935 (following the 1934 drought), were supplies of hogs reduced to so low a level. It should be observed here that, if the level of demand were different from average, the relationship between changes in total value and changes in the volume of supplies would be somewhat different from that indicated in section D of Fig. 3.

In Fig. 4 it will be noted that most of the variations in prices for cattle are associated with changes in slaughter supplies of cattle, changes in national income, and changes in the value of inedible

¹ The index of export demand as here shown was computed on the basis of the relation between changes in the value per pound of exports of hog products from the United States and changes in the quantity of such exports.

² In the correlation analysis of prices of hogs shown in Fig. 3, data for the years 1934 and 1935, while shown in the figures, were not included in the analysis, since a substantial tax on hog slaughter was in effect in both of these years.

products obtained from cattle. As is indicated in section D of Fig. 4, the relationship between changes in the total value of cattle slaughtered and changes in the volume of such slaughter is inverse for most of the range of variations in slaughter supplies occurring in the post War period. But when cattle supplies are reduced to a level consider-

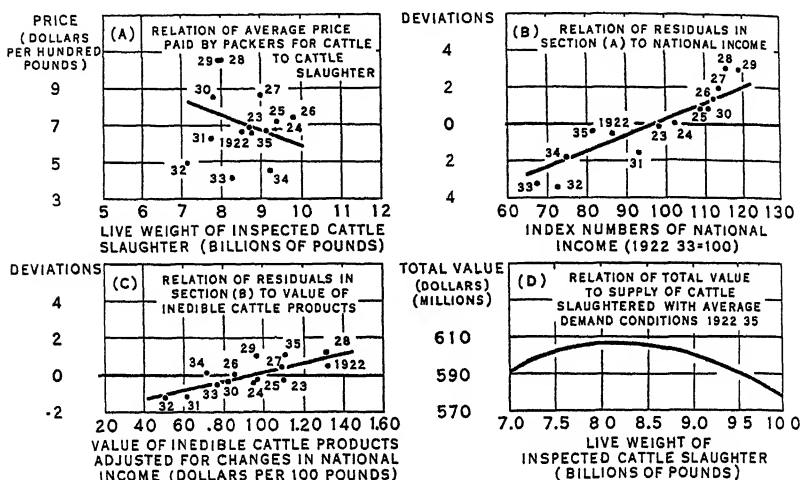


FIG. 4. CATTLE PRICES RELATED TO INSPECTED SLAUGHTER, NATIONAL INCOME, AND VALUE OF INEDIBLE CATTLE PRODUCTS, U.S., 1922-35

ably below average, decreases in supplies are accompanied by decreases in total value. Since meat production from hogs and cattle in the United States represents the bulk of the total production, it would appear that for all live-stock combined a negative relationship between supplies and total value has existed during most of the post-War period. It is noteworthy, however, that for sheep and lambs, which normally represent only 4 to 5 per cent. of the total live-stock slaughter, there has been a decided tendency for the total value of slaughter supplies to increase as the volume of sheep and lamb supplies increases.

The stability of the unit margin between live-stock prices and meat prices, which is the direct cause of inverse relation between changes in volume of slaughter supplies of live-stock and the value of such supplies, is largely a result of the relative inflexibility of wage rates, rents, and transportation charges, which are the most important items in total marketing costs for live-stock and meats. During the period from 1921 to 1930 these principal items included in marketing costs did not change greatly, whereas there was considerable variation in marketings of cattle and hogs. This period affords ample

evidence that little relation existed between the changes in the margin between the price of one species of live-stock and the value of products obtained therefrom on the one hand, and changes in the supply of the particular species of live-stock on the other. However, in this period also, total meat production was relatively stable, so that the 1921-30 period does not necessarily indicate a lack of relationship between the live-stock price spread and changes in aggregate live-stock slaughter. But from 1930 to 1934 this spread was reduced considerably as wage rates and rents declined, whereas meat production was well maintained. It appears, therefore, that there is little relation between changes in the margin or spread and changes in live-stock slaughter either in total or for a single species. Consequently, it would seem that, regardless of the level of marketing charges per unit, so long as they do not fluctuate with changes in slaughter supplies, the inverse relationship between changes in the volume of live-stock slaughter supplies and changes in the value of such supplies will persist.

As already indicated, from 1930 to 1934 meat production and consumption were well maintained in the United States. Because of the severe business depression, retail prices of meat declined materially during the first four years of this period, and consumer expenditures for meat were reduced about 40 per cent. from 1929 to 1932. The decrease in cash farm income from meat animals, however, was considerably greater, amounting to about 60 per cent. from 1929 to 1932. This greater decline in farm income than in consumer expenditures for meat was due to the fact that declines in the margin between live-stock prices and meat prices were relatively much less than the declines in retail prices of meats. Since the volume of meat production and consumption from 1929 to 1933 was maintained with only a relatively small decrease in the margin between live-stock prices and meat prices, total marketing charges for live stock and meats were reduced relatively little. Consequently, with total consumer expenditures being sharply reduced, the residual remaining for live-stock producers was reduced even more. In this period, and probably in other major depressions, the maintenance of meat production and consumption at normal levels, while advantageous to handlers and processors of live-stock and to consumers of meat, proved decidedly costly to live-stock producers.

THE WORK OF THE AGRICULTURAL SERVICE OF THE INTERNATIONAL LABOUR OFFICE

F. VON BÜLOW

Chief of Agricultural Service, International Labour Office, Geneva

THE International Labour Organization was set up at the same time as the League of Nations after the War. It is composed of the International Labour Conference which discusses and adopts international conventions and recommendations regulating labour conditions; of the International Labour Office which is working as a secretariat of the Conference and as a central research institute for social and labour questions; and, finally, of the Governing Body which decides upon the work of the International Labour Office and on the agenda of the International Labour Conference.

From the very beginning there has been an agricultural service inside the International Labour Office formed by a group of the staff of the Office devoting their time to studies on agricultural labour questions. This staff has never been very great, but, as certain technical questions such as social insurance, accident prevention, and statistical questions are also handled with regard to the agricultural aspects by other sections of the Office, the total efficiency of the Office in regard to agricultural questions is really bigger than the size of its agricultural service would indicate. It may also be of interest to the Conference to know that the Office has a special section for co-operative questions, which also handles co-operation in agriculture. The work of the agricultural service is determined by the same factors which determine the work of the Office as a whole. These factors are of two kinds. As I said in the beginning, this Office has also to work as a central research institute for social questions and is prepared to reply to demands for information from everybody, taken in the largest sense of the word. The Office gets demands and inquiries from students, from private organizations, from public bodies, and from Governments. It is of course the last kind of inquiries which are most important to us. As examples I may mention that some time ago the Office got the draft of the Labour Code of a South American State sent over for study and comments. With regard to agricultural subjects we are preparing an extensive memorandum on reconsolidation of land for an Indian committee, and just before leaving I had completed a report on Minimum Wage Regula-

tion in Agriculture for an official Swedish committee studying this question.

This kind of inquiry involves a good deal of work for the Office. Others are of a different kind and can be answered immediately and sometimes also have to be answered immediately. I remember once getting a telegram from our branch office in London asking for information about wages of agricultural workers in East Prussia. This information was to be used by the Minister of Agriculture two days later to reply to a question put to him in the House of Commons by a member who had been upset by the arrival of wheat in an English harbour from East Prussia and who assumed that this was only possible owing to the low wages paid in agriculture in that part of Germany. These inquiries and demands for information involve that the Office must follow, in a regular way, the development of labour conditions everywhere.

But the long-time trend of activity is determined by the work of the Conference. The Office has to prepare the reports submitted to the Conference, which form the basis of its discussion. The preparatory work does not start only when the Governing Body has decided to put a certain item on the agenda of the Conference. It is also the duty of the Office to keep the Governing Body informed in order that it may make the right choice of items for the agenda. With regard to agricultural questions the choice is to some extent dependent on the social questions selected in industry. There has nearly always been a tendency to have the same questions examined for agricultural workers, as are handled for industrial workers, and this tendency has been growing. This means that sometimes questions concerning agriculture are discussed which would perhaps not have been selected if attention had been paid exclusively to the order of importance of social problems within agriculture itself.

By a rapid survey of the activities of the agricultural service since the Office was started I may illustrate what I have said. The first International Labour Conference met in Washington in 1919, but no agricultural questions were on its agenda. However, a resolution was passed asking that the same questions discussed in Washington should as soon as possible be examined with regard to the application to agriculture of the decisions taken. This took place in 1921 in Geneva during the third International Labour Conference. For this conference the Office had prepared a very considerable document called the Technical Survey of Agricultural Labour Questions which gave practically all the information available on agricultural labour conditions in the first post-War years. The Conference adopted

conventions referring to agricultural labour questions, dealing with the age of admission to work in agriculture; the right of association of agricultural workers; the compensation for accidents suffered by agricultural workers; and several recommendations dealing with living-in conditions in agriculture, technical education, social insurance, night work of women and children, &c. With the exception of the question of wages and hours, nearly all questions were covered which were of immediate interest to agricultural labour, and in the following years the agricultural service could generally devote its time to research studies proper. It may, however, be added that the decisions of the Conference in 1921 were perhaps a bit too numerous and taken too hastily to obtain a satisfactory result. Work of revision has now been started which involves new studies into the questions indicated to find out whether better solutions can be found. As many of these questions are of special character concerning child labour and female labour, they are partly handled by other sections of the Office in co-operation with the agricultural service.

During the period of research the agricultural service got time not only to follow the development of labour questions proper but also to study special aspects of the changes taking place in the agricultural structure which are of importance to its work. Thus the Office service studied agrarian reforms which had been carried out in eastern European countries and also in certain central European countries. These of course have a fundamental importance to its work because, through these agrarian reforms, the relations between the numbers of independent farmers and workers are often radically modified. The service studied also the question of farm labour science, which at that time was new, in order to find out to what extent these new ideas would be of importance to agricultural labour. Some research studies were also carried out at the expressed desire of the Conference, e.g. a study on the representation and organization of agricultural workers, which not only gave an opportunity to study the history of trade unionism in agriculture but also to make an attempt to describe and classify the various types of agricultural workers found in the different countries. Further mention may be made of a study of collective bargaining in agriculture. It was the general impression at the time when this study was made that, social legislation in agriculture being rather slow and in fact no considerable progress having been made since the first post-War years, it would be an advantage to attempt to improve labour conditions in direct negotiations between employers' and workers' organizations.

Towards the end of this period of research work, studies were undertaken in co-operation with the International Institute of Agriculture into the important problem of the rural exodus. Two study journeys were undertaken by an official of the agricultural service and one from the International Institute of Agriculture, and two joint reports on the rural exodus in Germany and Czechoslovakia have been published. From 1927 to 1933 the Conference handled a number of insurance questions concerning sickness, old age, death, and invalidity insurance, which applies to industrial workers as well as to agricultural workers. The service, however, took no part in this work because the same principles were to be applied to both categories of workers, and the questions were therefore entirely handled by the section of the Office dealing with social insurance questions. However, two series of conventions, one for industrial workers and one for agricultural workers, were adopted separately for reasons which time will not allow to be indicated here.

Towards the end of this period, however, new questions came up regarding fee-charging agencies and unemployment insurance, where again the service was called upon to prepare the sections on the agricultural aspects of the problem to be included in the documentation submitted to the Conference. With regard to fee-charging agencies there proved to be no difficulties in applying the same regulations to agriculture as to industries, but with regard to unemployment insurance the Office itself had to recognize that, in spite of the unemployment which at that time, in 1933, was prevailing even among agricultural workers, unemployment insurance in agriculture was not sufficiently developed to allow the Office to take the responsibility of recommending international regulation of this question. Agricultural workers were therefore excluded from the convention adopted, while the Conference charged the Office with a new study of unemployment in agriculture, especially of the remedies to fight this evil. The insufficient staff of the service, together with the fact that some time had elapsed before the more definite instructions could be given by the governing body with respect to this work, brought it about that it has only recently been begun. Meanwhile time has changed so much that the Office has decided to extend its study from being a study of unemployment in agriculture to be a general study of the employment situation in agriculture. This employment situation is at present characterized in certain countries by rural over-population, but in other countries fairly highly industrialized it is characterized by lack of agricultural labour especially of young workers, while older farm workers cannot

always find employment. It is to be expected that this study will bring interesting results.

As the result of recent activity of the Conference in regard to other workers, the agricultural service has also been charged to study the question of holidays with pay, which the industrial workers' representation on the Governing Body and in the Conference wants to have examined and, if possible, regulated for agricultural workers as it was at the last Conference for industrial workers. This question is perhaps not exactly of the same importance to agricultural workers in view of the fact that such questions as wages and hours are still unregulated from an international point of view.

In its studies the agricultural service has not only to take into consideration structural changes in agriculture but also the economic conditions of this industry, which will ultimately determine the possibility of social measures to be taken for the benefit of agricultural workers. With the development of the agricultural depression crisis, the service has therefore had to pay more and more attention to these subjects and has followed closely the crisis legislation which has been so important during later years. It is impossible, and also not necessary, for the service to follow all the technical details of this legislation. But there are aspects of it which are especially interesting; for example, the effects of such legislation on the employment possibilities in agriculture, which may be reduced not only by international agreements concerning sugar and wheat production but also by national efforts to cut down the production of crops and live stock. At the same time the service is studying differences in treatment given by crisis legislation to smallholders and to large estates. The agricultural service and the International Labour Office have, of course, to deal in the first place with the question of agricultural labour, but it has to be remembered that in many countries the conditions and the standard of living of smallholders are so close to those of agricultural workers that smallholders are often inclined to take up paid labour and to compete with landless agricultural workers. In the long run, therefore, it is not possible to expect any real improvement in the conditions of agricultural labour which is not followed by concurrent improvement in the standard of living of smallholders. It is for these reasons that the agricultural service, next to observing the conditions of agricultural labourers, is very much interested in the standard of living of smallholders.

Much of the research work of the agricultural service is done for internal use, and the agricultural service cannot of course expect to

publish anything interesting on the economic situation in agriculture which is so much better and effectively followed by the International Institute of Agriculture. But from time to time, we achieve results from our research work which we believe will be of general public interest. These results are published in the periodicals and publications of the Office. The Office has a weekly publication called *Industrial and Labour Information* which contains all brief news on social and labour developments. The Office publishes a monthly review, *The International Labour Review*, which contains articles of a more scientific character, and to which not only the staff but also outside collaborators contribute. I may especially draw your attention to a very interesting article by Professor Ashby on the position of farm workers in England, published one and a half years ago. Finally, the Office publishes studies and reports, a series of which is devoted to agricultural questions. It is in this series that the studies of the representation of agricultural workers, on collective bargaining in agriculture, on agricultural labour law in Central European countries, and also the joint studies of the International Institute of Agriculture and the International Labour Office on rural exodus have been published.

You may get the impression from this survey of our activity of the agricultural service that it is lavish in results and wide in scope. This is unfortunately not the case, and the reasons therefor are two. First, this kind of study is extremely difficult, especially from an international point of view; the documentation is very scarce. Even from a national point of view, the information available on social and labour conditions in agriculture is often enough rather mixed. The number of times I have opened a survey of several hundred pages on agriculture in a given country or region, looking for information on agricultural labour and on conditions of smallholders and farmers, and the number of times I have been disappointed, I cannot count. You will find, in books of several hundred pages, sixty pages or more devoted to live-stock, while the human beings who are occupied in agriculture have been dealt with in two pages. The studies indicated therefore involve a very considerable amount of research work, and demand a lot of time before even small papers and reports can be published. Secondly, the agricultural service has always suffered from insufficient staff; other questions to be handled by the Office have been furthered in the first place. The organization of industrial workers is more important, and in a general way the social problems of industry are paid more attention by Governments also. This has made it necessary

for the Office to devote as much as possible of its means and staff to these studies and to leave aside and postpone the studies with regard to agricultural labour questions. There are signs that in more recent years some understanding of the importance of social questions in agriculture has been rapidly growing. At this Conference Professor Sering pointed out the other day that the study of land tenure in various countries carried out under his direction will be devoted to bringing out the social aspects of this problem, and, from other remarks made during the discussions, I am confirming my impression that I am right when I believe there is a growing interest in social questions in agriculture. I hope, therefore, I am right when I look forward to close co-operation with farm economists in this field.

PART-TIME HOLDINGS FOR URBAN WORKERS

FIRST OPENING PAPER

H. KRAUSE

Berlin, Germany

IN modern European and American civilization technical development has in the main been applied to industrial production and, in spite of the reduction of working hours, has increased to an unprecedented extent the production and consumption of industrial goods and thereby the standards of living.

The great expansion and simultaneous specialization of industrial production has unhappily also caused the development of an industrial proletariat, the economic significance of which was already apparent in times of prosperity; but the social significance became especially evident in times of economic stress and necessitated numerous political measures.

Thus in many countries social policy gained supremacy over economic policy and initiated measures of planning by means of which various sections of economy are in increasing measure treated only as branches of a more or less isolated national economic system.

This viewpoint of national economy attributed the great crisis-susceptibility of great parts of the economic system to the relatively great decline of the rural population and attributed the growth of radical political tendencies to the increasingly sharp distinction between the work and the private life of the man in the street; this again as a consequence of industrial specialization.

Therefore, to lead back a portion of the industrial population to agriculture seemed to offer a solution to the problem. For in agriculture, professional life and private life have by far the closest connexion. Simultaneously, it was hoped to render the whole economic system decidedly more crisis-proof by this expansion of the agricultural population.

Agriculture, being an organic type of production, is far less suited to modern technical methods than industrial production, for in agriculture not man, but nature, with its cycles of season, climate, &c., is the real creative force. Nevertheless, during the last generation, the output per unit of labour has been materially increased in agriculture under the influence of modern technical developments,

thanks to the application of the results of scientific research. Even though this increase may be less than that in industrial production, the scope for consumption of agricultural produce is also very much more limited. Higher total income of the population benefits primarily industries and not agriculture, for which an increase of the scope of marketable production is mainly dependent on a growth of the population.

The increased agricultural output per unit of labour coupled with the comparatively low increase of *per capita* food-consumption caused a relative decline of the agricultural section of the population, a decline which is all the greater as the possibility of mechanization and thereby the increase of production per unit of labour increases without restriction in agriculture.

In U.S.A., for example, the proportion of agricultural population has dropped during the last 100 years from 75 to 25 per cent. of the total population, and, in spite of this decrease, official circles of U.S.A. are convinced that 60 per cent. of the present number of farmers would suffice to ensure the food supplies of the population, i.e. only one in eight Americans would be needed for food production.

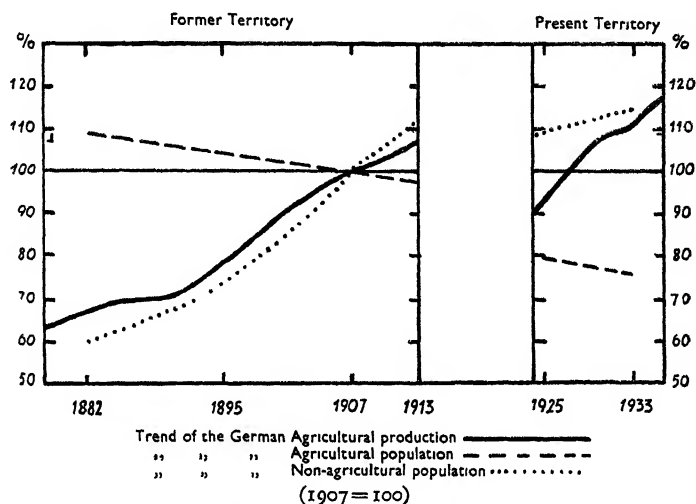
Even in a country like Germany with a system of land tenure which is comparatively rigid compared to that of U.S.A., agricultural production has been approximately doubled in the last fifty years, whilst in the same period the agricultural population has declined.

The scope of mechanization is most limited where the physical conditions are especially unfavourable, i.e. in mountainous areas and—or where—because of a surplus rural population the low wage standard renders extensive use of machinery uneconomic. In over-populated rural areas the holdings are small in size, the labour supply per unit of land is high, and the outlay of labour per unit of production is also high. Unless the incomes of farmers of such areas are sustained by an artificially supported price level, unless the rural population can supplement its agricultural income by subsidiary industrial earnings, these regions are characterized by a low standard of living.

But in areas where the physical and economic conditions present no great obstacles to agricultural mechanization, the utilization of an optimal machine equipment usually determines the minimum size of the farms; to this level the smaller holdings must be enlarged if they are to remain fit to compete. This applies particularly to the temperate zones inhabited by the white race.

In the old-settled areas the development takes a middle course between these two alternatives owing to the greater lack of elasticity of the agrarian system. For example, in Germany the number of

peasant holdings suitable for use of machinery is steadily increasing at the cost of both smallholdings and large farms. In these machine-using peasant holdings the advantages of the family labour system seem to combine with the advantages of the use of technical equipment in what I would like to call an optimal compromise. This shift in the distribution of agricultural holdings is not accompanied by any material change in the total number of farms. If this development is maintained in Germany, a material increase of agricultural popula-



GRAPH 1. TRENDS OF GERMAN AGRICULTURAL PRODUCTION, TOTAL POPULATION, AND AGRICULTURAL POPULATION

tion is not to be expected even in the event of a total disappearance of large farms and of a further general spread of more intensive farming systems. The opposite would seem more probable.

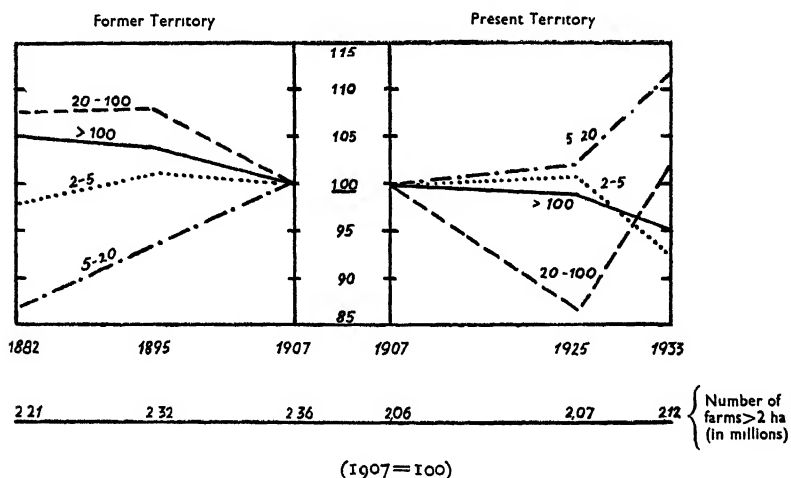
The plan to check the mass-congregation of industrial workers and to diminish the susceptibility to crises in industries by bringing back a part of the industrial population into agriculture is therefore in practice not feasible. It would only be possible by forcibly preventing all technical progress in agricultural production, which in turn could only be accomplished by heavily encumbering all other branches of economy.

The fact remains, however, that the re-establishment of a connexion between the 'man in the street' and the land is one of the surest safeguards against loss of personality and against susceptibility to mass instincts.

If this is not possible by approach from the angle of economic life, it may still be approached from the angle of private life. In other

words, the private life of the individual industrial worker can be placed on a broader and surer basis by means of a garden allotment, which would also give him the possibility of a subsidiary income capable of being increased in times of stress.

A glance at economic history will show that there is nothing new in supplementing an income derived from handicrafts or industry by agricultural activity on a piece of land owned or rented. On the contrary it is an old-established form of land settlement which existed before the Industrial Age for wide sections of the population in all



GRAPH 2. INCREASE AND DECREASE OF NUMBER OF FARMS IN VARIOUS GROUPS SINCE 1882. (UNIT OF SIZE IS HECTARE)

small and medium-sized towns. It was indeed the form of settlement of 'citizens' as distinct from 'peasants', and by its close connexion with nature it constituted one of the principal bases of national culture.

Where similar conditions are still to be found at the present day, they are in most cases remnants of this old social structure. All that is new is the growing importance that is again being attached to the link between industrial work and agriculture or gardening and the movement to foster it. The development of modern industrial methods supports this. The progressive reduction of hours of work leaves more time available for agriculture and gardening as a subsidiary occupation. The work in the factory now involves much less physical exertion than it did one or two generations ago. Often it requires the use of only a limited series of movements, but much brain work. Therefore to keep in good health the worker needs supplementary physical exercise in the form of sport or other activities. Added to this the great progress made in means of trans-

port during the last fifty years has done much to extend the radius within which the people employed in a factory can live. In other ways, too, modern invention has created a closer connexion between town and country.

The development of the life of the village as a social partner with equal rights in the modern State promises to bear valuable fruit in many respects. Besides an extension of the 'residential radius', the use of electricity for power and the great progress made in means of transport of goods allows much more decentralization of industry than was possible in the age of the steam-engine.

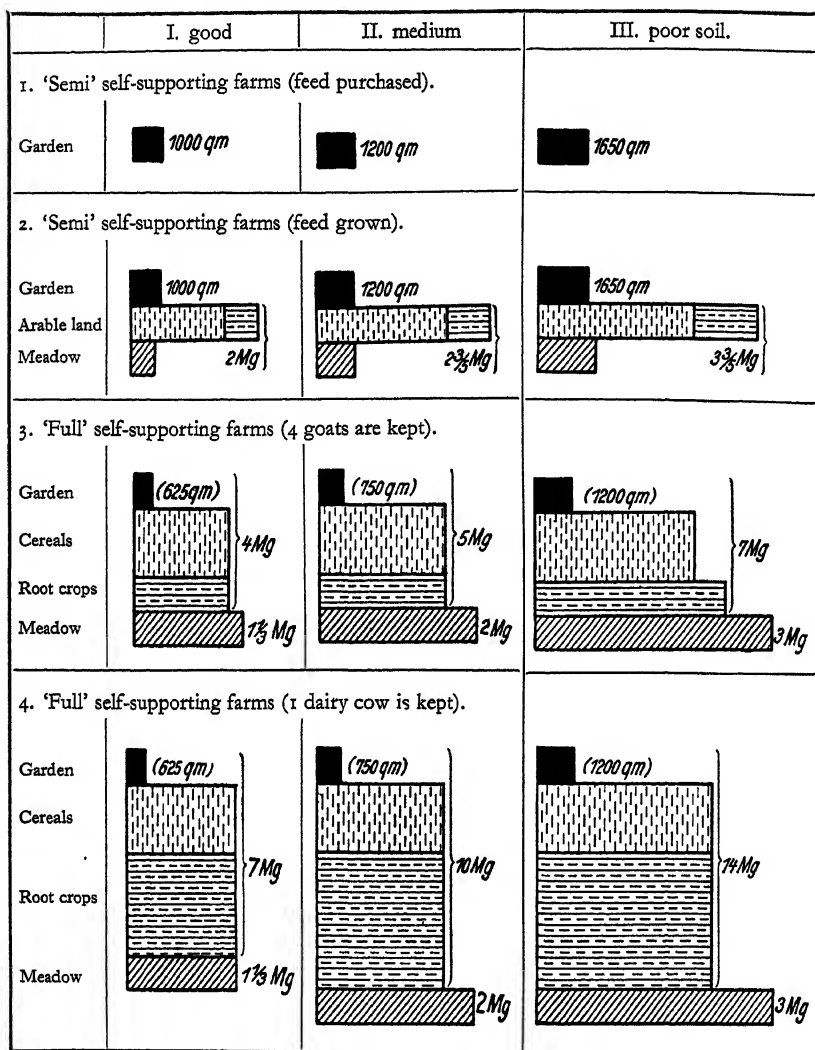
For the workman himself the use of a plot of land means, for the most part, cheaper food. In general, very little is known as to how much these costs can be lowered or what area is necessary to produce say 50 per cent. of the household supply. Graph 3 is reprinted from a valuable German publication and gives some figures about the amount of land of different fertility, which is necessary to provide the half or the total of the household supplies.

Besides lowering the expense of food there will also be a more sufficient supply, especially for the low-paid groups. Not only will larger quantities be consumed, but the food will be richer in vitamins, because of the much larger consumption of fruit and vegetables produced at home. How important this enrichment is, is shown for instance in a recent English study by J. B. Orr, *Food, Health, and Income*, and in a publication of the International Labour Office, *Workers' Nutrition and Social Policy*, which show unfavourable results for the lower-paid groups.

Further important points are the workers' increased capacity to resist depressions by means of the many possible ways of dividing up the agricultural and industrial work among the family according to age and sex, and also to the nature of the industrial work, the question of cheaper and healthier living conditions, the utilization of spare time, and the visible investment even of small sums in the improvement of the homestead.

Moral and spiritual factors must be allowed equal weight with material ones, if full value is to be given to the scheme. One of the results of all these factors is the increased number of children of those families who cultivate a piece of land. This is the case in *all* classes of professions as was shown recently by the German Statistical Office which investigated this question. Graph No. 4 shows a few figures based upon this material.

For the national economy as a whole this increase in the proportion of the population having a stake in the country is an effective

GRAPH 3. AREA REQUIRED FOR PART-TIME FARMS OF VARIOUS TYPES¹

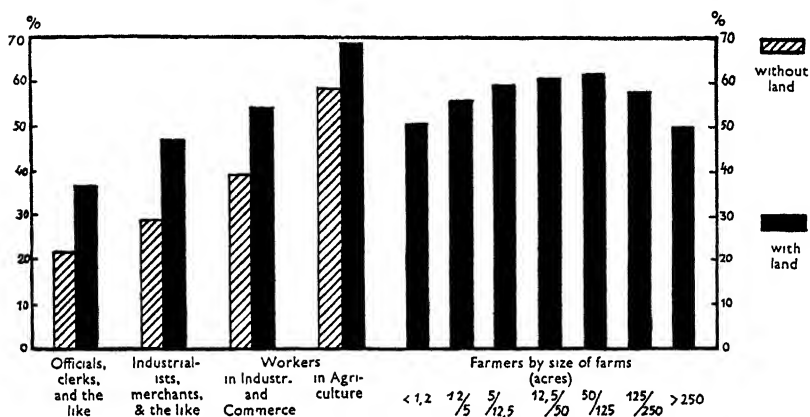
Cases 1 and 2 are those of 'semi' self-supporting farms, which provide fruit, vegetables, potatoes, eggs, milk, and meat for a family with 2-3 children. In both cases there are 1 goat, 1 pig, and 6 hens. The difference between the two cases is that in case no. 1 feed is purchased and in no. 2 it is grown.

Cases 3 and 4 are those of 'full' self-supporting farms, which provide not only the above food but also bread, grain, and fat. In case no. 3 the farm is stocked with 4 goats, and in case no. 4 one cow replaces the goats.

1,000 qm. = 1,200 sq. yards; 1 Mg. = 2,500 qm. = 3,000 sq. yards; 4 Mg. = 1 ha. = 2½ acres.

¹ Taken from: G. Laupheimer und M. Hogel-Wertenson: *Die Vorstädtische Kleinsiedlung in der Mark Brandenburg und in der Grenzmark*, Publication of 'Deutsches Forschungsinstitut für Agrar- und Siedlungswesen', Berlin 1935, Verlag Paul Parey.

means of bringing people back to the land without hampering the technical development of purely agricultural undertakings. Further, areas which would otherwise be depopulated can in this way be settled with a semi-rural and a semi-industrial population. Often the



GRAPH 4. NUMBER OF CHILDREN AND USE OF LAND. Percentage of families in which 4 or more children have been born among married couples forming a household for 20 years and more.

existence of a stable group of skilled workers is associated with some highly developed special industry. The highly skilled Württemberg industry, for instance, depends partly on the body of skilled workers who have a fixed rural domicile.

The capacity to resist a depression or to recover from its effects, which has been mentioned above as a special advantage for the worker himself, is naturally also an advantage for the economic system as a whole. Even where family ties form the only link between some of the industrial workers and the rural population, a link which usually gives them a claim to be 'supported' in periods of depression (as in Japan for instance), the effects of unemployment are not nearly as severe as in countries where there is no such connecting link.

Further, the great spiritual advantages of having a direct stake in the country, significant as they are for the individual, are of greatest value also to the community and the State. For, in addition to the purely agricultural part, a further section of the population as the result of tilling the soil becomes more closely united to the real essence of the State and Nation. The new generation is gradually becoming aware that the organic unity of the family is the primordial nucleus of the State itself.

An inquiry into the disadvantages of the scheme under consideration is of course as necessary as a consideration of the advantages.

For instance, the place of gainful employment will often be at a distance from the home, which means expense and lost time. Then there is the danger of overwork where the area is larger than the family can cultivate with moderate exertion. Further, the choice of a workplace is narrowed by the greater immobility of the worker's household. Sometimes too this immobility may compel a man to accept work that keeps him away from home throughout the week, which is naturally to the detriment of family life, and often results in placing too much responsibility on the wife's shoulders.

A closer connexion of a greater part of industrial labour and part-time farming or gardening may slow down the adjustment between labour supply and demand. There are cases, for instance, in poor mountain regions, where agriculture can be carried on only in connexion with industrial work, and, if in addition this industrial production is confined to a single branch and the work comes to a standstill, the result is usually distress for the whole region, since the population cannot be transferred to other branches of production.

In addition to these risks there is also the possibility of a detrimental effect on the established agricultural market, especially if these subsistence holdings produce much more than is needed for home consumption, and the surplus is marketed. A further important point is that, although the intensity of the system of cultivation usually increases, technically the extension of these subsistence holdings must in itself be regarded as a retrograde step for the agricultural and horticultural production of a country as a whole, since the amount of work required per unit of production is increased. The question arises, however, how this work is to be evaluated. Is it to be placed on the same footing as work in the principal industrial occupation, or as recreation, or as something between the two?

According to circumstances, bound to vary within wide limits, advantages or disadvantages may prevail. But whatever those local and other differences may be, the advantage involved in establishing a more intimate relation of the industrial worker to the soil can have its full effect on social development only if the worker finds a solid basis for earning a livelihood in his main occupation. It would be unreasonable to expect that part-time farming or gardening could provide a complete solution for all the economic problems arising out of unemployment. It has often been emphasized that an area of 5 or 10 acres is not enough for a farmer to make ends meet. How then can a family of unemployed persons make a livelihood out of $\frac{1}{4}$ acre (in Europe)?

Nevertheless, it would be a mistake to minimize the value of the food that can be produced on such a small area if skilfully handled and also to minimize the great social and moral advantages which may be derived from part-time farming or gardening. Such a misconception would be especially unfortunate in times of depression and in a rapidly changing world like ours.

Unfortunately the inquiries made into the problems of the rural industrial workers and its manifold ramifications have been only partial. There are various reasons why the systematic social and economic study of this group has been neglected. In the first place, during the second half of the nineteenth century and even up to the War, there was sufficient ground for believing that the group as a whole represented only a gradually disappearing remnant in the social community.

It was believed then that, just as in agriculture wages in the form of land were gradually being replaced, first by wages in the form of products, and then by cash wages, so too, sooner or later, with each new upward movement of industry, the industrial worker who still cultivated land would finally migrate to the towns.

But in addition the neglect of this occupational group by scientific approach may be partly due to the fact that these families with their small agricultural properties, plots or gardens, on the one side, and the great variety of their principal occupations on the other, are very difficult to deal with statistically and to classify clearly. Just because the structure of the group is characterized by its multi-formity, its members are, so to speak, neither fish, flesh, nor fowl. From the agricultural standpoint, their holdings are not really agricultural undertakings in the proper sense of the term, and, in particular, they do not produce for the market. Sociologically, too, these families cannot be regarded as purely rural.

For these and many other reasons agricultural science tends to regard the industrial worker on the land as a foreign group among the true rural population. Owing to the lack of fundamental research into the historical development of this occupational group, both in general and with special reference to different industries, regions, and peoples, and also to different periods of modern industrial development, there is much lost ground to recover. Such research should be organized on a broad basis, and it would be especially welcome if economic historians would contribute to it. On this basis, social and economic science could then describe and investigate in detail the structure of the industrial working class with reference to its connexion with the land in the recent past.

Especially, comparison might be made between representative areas or between industries where the proportion of landless workers is high and those where it is low. This would add to the value of the material as a whole and increase its usefulness for the purpose of practical economic policy, most important in the near future.

PART-TIME HOLDINGS FOR URBAN WORKERS

SECOND OPENING PAPER

K. HOOD

Pennsylvania State College, Pennsylvania, U.S.A.

ONE of the most interesting developments in our rural population in America to-day is the movement of urban workers to homes in the country. This movement is in evidence in all sections of the nation, but it has attained its greatest growth in the vicinity of our large industrial centres concentrated in the eastern part of the United States.

Is this an entirely new development, you may ask? No, the movement is not new. In fact, it has been in progress for a long number of years, but it became especially significant immediately following the World War. The greatest growth, however, has taken place since 1930. To-day it is estimated that fully three-fourths of all those living outside of our incorporated cities are dependent upon some source other than farming for a large portion of their income. A large number of these are commuting daily to their jobs in the city.

Why has this movement gained such widespread popularity during recent years? Back in the days of the horse and buggy, the dust road, and the long working hours in the factory, it was practically impossible for the man who worked in the city to live in the country. The coming of the hard surface road, the automobile, and other cheap methods of transportation, the shorter working day and the shorter working week in the factory, together with some tendency towards the decentralization of industry in some areas, have all contributed to make this, what we often term the 'new-back-to-the-land movement', a desirable one politically, socially, and economically. Thousands of our people in the industrial States have found it economical, convenient, and desirable to live in the country and drive back and forth to their jobs in the city.

While at Cornell University a few years ago, I had the privilege of making a study of about 3,000 of these families. I went into their homes and asked them a number of questions concerning living costs, farming operations, participation in community activities, cost and availability of modern conveniences, advantages and disadvantages of country life, earnings obtained from the city occupation, and numerous other questions pertaining to their economic and social well-being.

Allow me to talk about these people for a little while, and then I shall tell you something about what our Federal Government is trying to do in order to encourage this very worth-while movement.

Our interest in the rural-residential movement in New York State began when we started our intensive work in land utilization. We found that considerable areas near our industrial centres were devoted to country homes and part-time farms. Some information on the situation was needed, and so we began our studies of this development in the summer of 1932. A total of 725 records were obtained in two different areas during 1932 and 1933. In the spring of 1934, a total of 2,400 abbreviated records were obtained in co-operation with the Division of Subsistence Homesteads, which was a government agency engaged in the development of homestead projects in various parts of the country. All of the ensuing discussion will be based upon the findings of the Cornell studies conducted in 1932 and 1933 unless otherwise stated.

Many of these families obtained a part of their living from home gardens, one or two cows, and small poultry flocks, while others did considerable farming. The farming operations of the great majority, however, were rather limited. The average holding was about 12 acres in size. Less than \$100 worth of live stock was kept on the average place. The total farm receipts were under \$100, and the food and fuel produced and consumed on the premises were worth \$105. Approximately 15 per cent. of those interviewed had neither crops nor live stock. Most of the families were obtaining practically all their income from outside work. It was found that on the average the head of the family got \$751 a year from outside employment, and other members of the family earned an additional \$93 outside.

We found that less than 5 per cent. were dissatisfied with the country way of life and wished to return to the city to live. Why should these commuters be so enthusiastic about country living? Does it not mean, inasmuch as these people are working in the city, that they must necessarily rise earlier in the morning in order to get to their city jobs on time? Does it not mean lack of modern conveniences in numerous cases? Does it not mean the lack of educational opportunities for their children? Does it not mean the lack of numerous valuable social contacts? In short, does it not mean a complete revolution in ways of living for a group accustomed to city life? I know of no better way to answer these questions than to tell you what these people have told me.

One question that this group was asked to answer was: 'What are the chief advantages and disadvantages of country life?'

Almost 40 per cent. gave as the chief advantage of living in the country the possibility of improving their financial position compared with what it would be were they to move to the city in order to be closer to their place of employment. It was the opinion of these people that they could add to their earnings by small farming operations and at the same time live more cheaply than they could live in the city. Twenty-one per cent. listed as the chief advantage of country life the fact that they preferred country living to living in town. Fourteen per cent. listed as the chief advantage the improved health conditions of the country, and 7 per cent. said the most important advantage of living in the country was the fact that rural regions proved to be a better place for raising children.

And now, what about the disadvantages of living in the country compared with living in the city? Listen to what these people say. More than 43 per cent. said that there were no disadvantages. Approximately one-fourth listed the transportation problem as the most serious drawback of living in the country. There were 16 per cent. who listed lack of conveniences as the greatest disadvantage. Bad roads ranked first in about 3 per cent. of the cases.

Disadvantages there are, but, when these disadvantages were compared with the advantages, the great majority held that this new type of rural life was preferred to living in the city.

The economic advantages of living in the country were emphasized, as has been pointed out previously, by the families interviewed. Do our researches substantiate this conclusion? A comparison of the costs of living in the country and in the city was made for a group of families who had moved from the city to the country within five years of the time of the interview. This comparison showed, after making adjustments for the decline in the general price level, that the average family in this group was living for \$170 less per year than it would now cost them to live in the city; assuming that they had the same standard of living in the city as they had when living in the city previously.

Seventy dollars of the \$170 saved by living in the country was the result of a lower standard of living in the country—that is, they may have had electricity in the city and oil lamps in the country; they may be doing without certain types of amusement; they may be dressing less expensively; or they may be living in houses which are somewhat less desirable. When the comparison was made on the basis of the same standards of living in the country and in the city, it was found that the families saved on the average \$100 per year by moving from the city to the country.

The largest saving made by these families was in house rent or maintenance. The saving in this item averaged \$126 per year. The next largest saving was made in food. Small savings were made in clothing and amusements. The average cost of getting to work was increased \$31 per year by moving to the country.

The annual savings increased as the food and fuel produced for home use increased, as the size of the family increased, and as the miles to the city occupation decreased.

In addition to the savings resulting from living in the country, there is also the opportunity for making money from part-time farming operations. The average net family income from farming operations was \$93 per year. A few netted as much as \$1,000 from the farm in the year studied.

One of the most important factors to consider in the location of a rural home for a city worker is the distance from the home to the urban occupation. The average cost of transportation to and from work was 30 cents per day. The cost ranged from 10 cents per day for those who travelled less than one mile to 88 cents per day for those who had to travel 13 or more miles per day. Those who were located at long distances from the city job found that excessive transportation costs offset the savings made in house rent or house maintenance cost.

The type of road on which the property is located is very important. It is highly desirable that it should be located on, or very close to, a hard road. Electric light and telephone lines are more likely to be found on hard roads. Income from boarders, roomers, and overnight guests is greater on paved highways. Such roads offer more opportunity for the sale of produce at the roadside. Paved roads are less likely to be impassable during periods of inclement weather. Homes on improved roads are likely to appreciate more in value than others.

The value of the land for agricultural purposes has an important bearing on the desirability of the location of a rural home if any gardening or farming is contemplated. Electricity, telephone, and other facilities are being extended into the more productive areas. Some people buy land in poor agricultural areas because it is cheap. Our studies show that this is inadvisable because these areas are seldom provided with modern services; crop yields are low; farm incomes are unfavourable; and a process of gradual abandonment is everywhere in evidence. Real estate in these areas is declining in value.

Our studies indicate that the city worker should locate his country

home: (1) on or near to a hard road; (2) within six to eight miles of the place of employment; (3) on a good agricultural soil, if any gardening or crop farming is contemplated.

The growth of rural homes for city workers has taken place so rapidly that many communities which were distinctly rural a decade ago are now mainly rural-residential. Scarcely a rural community in our industrial East has escaped the influx of these new 'back-to-the-landers'.

Almost every time I discuss this very interesting group of people, the question is asked: 'What does the farmer think about this movement?' Most farmers were found to be in favour of it as long as farm production was confined largely to the production of commodities for home use and as long as the people were financially able to take care of themselves without appealing to the welfare agencies for support.

The rural residenter has made a very definite and worth-while contribution to the economic and social well-being of most of the rural communities in which he has settled. His coming has increased the population of many rural communities and has made it economically feasible to install electric lines, telephone service, and city water lines. The tax base has been enlarged, and this has made possible more and better schools, improved roads, and more efficient government service. A brisk demand for well-located properties within commuting distance of the industrial centres has enlarged the market for farm real estate. The rural resident, moreover, has helped to support numerous organizations in the rural communities. The study of subsistence homestead families showed that of all the memberships of organizations three-fourths were held in country organizations.

Most farmers realize that this movement is a permanent one and that they as farmers should co-operate in order to make the movement as satisfactory from the farmers' standpoint as possible. To most farmers, this commuter is a new neighbour who is helping him to pay his taxes and to support his schools, churches, lodges, farmers' organizations, and other activities in the community. Moreover, his coming has enhanced the market for farm real estate and has helped to make modern conveniences available to many farmers who could not otherwise afford them.

President Roosevelt has long recognized the value of rural homes for city workers. I remember an address which he gave at Cornell University while he was Governor of the State of New York. In this address he told us about the Commission which he had just

appointed to study plans for stimulating the movement of city workers to rural homes. Soon after Roosevelt's inauguration to the Presidency, he revived the ideas which prompted him as Governor of New York to appoint the Commission on Rural Homes. The Division of Subsistence Homesteads was organized as a result. The purpose of this act was 'to provide for aiding the redistribution of the overbalance of population in industrial centres' and 'to establish experimental homesteads' projects in various parts of the country.

At the present time there are 32 of these projects in active operation. These subsistence homesteads are established and administered in groups, accommodating from 25 to 100 families and in exceptional cases a larger number.

The individual 'homestead' ordinarily consists of from 1 to 5 acres, depending on soil, size of family, character of agricultural operations contemplated, opportunity for wage employment off the homestead, and other factors. On this plot of ground the family is expected to raise vegetables and fruit and, depending upon circumstances, poultry and possibly a pig or two; in some cases a cow is kept. Production is on a subsistence basis for the household use of the family and not for sale in the market. The homestead, in other words, is intended to be a supplement to work in office or factory. In some instances, a factory is established on the homestead in order to provide employment for the homesteaders, while in some cases outside employment is obtained in the factories of nearby towns.

Just before I sailed for Europe, I paid a visit to the homestead project in my own State of Pennsylvania. Here I found 167 families living in their new homes. About 90 more families will move in as soon as the construction of their new homes has been completed. At present the families in residence are all occupying their future homes under temporary licensing agreements, but when construction has been completed they will be offered a permanent sales contract which calls for payment on a forty-year basis. Each of these families has a large garden and, in most cases, a flock of chickens.

In addition to these small individual properties, there is a large farm which is owned by the entire group. This farm is devoted to the production of crops and dairy products which are used by the homesteaders. Some of the men work in factories in nearby towns, but the great majority are engaged in construction work on the project.

The work of the Division of Subsistence Homesteads has been taken over by the Resettlement Administration. No more new pro-

jects are to be started, but all those which have begun are to be carried to completion. This phase of the Government programme has not met with much success, but a few of the individual projects appear to have some chance of becoming worth while.

The Resettlement Administration is now interested in the development of three large suburban community projects, housing from 750 to 1,500 families each. The distinctive features of these projects are that they are planned as complete communities and are surrounded by an area of recreational and agricultural land to protect the towns from encroachments by undesirable developments. The prototypes of these towns are the 'garden-cities' of Welwyn and Letchworth in England.

Out near Berwyn, Maryland, ten miles from the heart of Washington, the Resettlement Administration is building Greenbelt, the largest and most complete housing demonstration ever undertaken in the United States. When completed, there will be 1,000 homes at Greenbelt to be rented to people with incomes of \$1,200-2,000 a year who are now employed either by private industry or by the Government in Washington or in nearby Virginia and Maryland. Although the new community at first will provide dwelling units to accommodate 3,500 people, the planners, architects, and engineers have also thought of future problems of expansion. They have created a town plan, purchased land, and constructed utilities capable of servicing 2,000 additional homes which would shelter an ultimate population of 12,000 to 15,000.

Greenbelt will be a new town built from sewers to parks. It is a town which will provide adequate homes in healthful surroundings for low-income families at rents they can afford to pay. And the job of building these houses is being done by men who, only a few months ago, were forced to accept public relief in order to keep themselves alive. As a demonstration of large-scale planning, it is hoped that they will be a stimulus to private enterprise and afford an example for future subdivisioning, whether private or municipal.

These experimental rural housing projects may be of some assistance in pointing the way to the solution of some of our larger problems. I feel, however, that a much greater service could be rendered to the majority of the city workers who contemplate moving to the country if more adequate credit were made available for the purchase of small rural properties.

This urban-rural movement in general has not taken place because of any general legislative programme or because of the activities of social reformers interested in the welfare of city workers. It has

developed because individuals have found it more desirable and more economical to live in the country than to live in the city.

I feel confident that this movement will continue to grow in importance, and every assistance that is possible should be given to these people in helping them to locate wisely, to buy advantageously, and to produce economically.

This movement, associated with the trend of working hours, improved transportation facilities, and the increase in hard roads, need not necessarily conflict or compete with full-time farming. With a wage level accompanying regular employment sufficient to provide an adequate income, these people will produce less of their own food and purchase more from farmers. But during periods of unemployment and reduced incomes, families should have immediate recourse to the land and be in a position to obtain the major food requirements which they no longer are able to purchase because of their reduced buying power.

DISCUSSION

F. VON BÜLOW, *International Labour Office, Geneva.*

My reason for taking part in the discussion now is that Dr. Krause has been too modest to tell you himself that he has a definite practical aim in his paper. About a year ago, or some time in the course of the winter, I had the pleasure of meeting Dr. Krause for the first time when he passed through Geneva, and we got into a very long discussion on this question of industrial part-time farmers or whatever we called them on that occasion. We did not come to any conclusions with regard to the value of the system, but we both agreed that two things were missing. First of all, the terminology was in an awful disorder. Everybody had his own pet name for the movement, which was not correctly understood by the rest. Secondly, some very important problems involved in this movement, if it is to take place on a large scale, were not sufficiently understood and analysed in a systematic way. We therefore agreed that it would be good if something could be done. I asked Dr. Krause to write an article for the *International Labour Review* which was published in December 1935, where he introduced this question, and in the next number of the *International Labour Review* another article written by an Englishman on this movement in England will appear. Dr. Krause suggested that it might be a good idea to use this Conference to have an exchange of views on the subject in the hope that, out of that discussion, would result some improvement in the terminology and a better general view of the problems involved. Dr.

Krause took the initiative with the organizers of the Conference to get such papers presented; he has presented the first paper himself, and Dr. Hood has been kind enough to present the second paper.

I think we all agree that these papers have been most interesting, and I think we all agree, too, that in spite of all the interesting information it would be very difficult to have a really useful discussion on the value of smallholdings for industrial workers on the basis of the information at present available. The papers read by our two colleagues already show the difficulties in terminology. Dr. Krause referred several times to industrial smallholdings of about 1 morgen of land, and he also presented a graph which speaks about the industrial or *Stadttrandsiedlung* up to 7 morgen. Dr. Hood used, without any difference as far as I could grasp, the terms 'rural homes', 'part-time farmers', and 'subsistence holdings'. In this field of terminology there is a good deal to be done, and also, with regard to the problems themselves, I think that we are still too much at the stage where we examine the problem only after having made up our minds. In other words, we say we are going to organize agricultural holdings, and then we discuss and examine all the difficulties and disadvantages involved. But it is not looked at in close enough connexion with the whole social background and the economic activity of society as such.

The question of the relation of such smallholdings to agriculture is not solved by finding out that the farmers in the district to which these people come are satisfied. If the settlement is done on a really large scale, the problem is much wider, and farmers in the United States in fact were enough afraid of the subsistence-holding movement to cause Secretary Wallace in his first report after the passing of the A.A.A. to make a special reference to the question. Further, there is an enormous difference in referring to smallholders and industrial part-time farmers as they exist in many parts of Europe, in Württemberg, Belgium, Czechoslovakia, established in a more or less natural way, and the occupants of smallholdings which are financed by the State. These latter are in quite a different position from the former who, more or less by the help of their own money, have settled in the country-side. That is a problem which troubles me very much, especially from the point of view of the International Labour Office in Geneva. It is a general policy in many countries, in order to divide existing industrial work among all people unemployed, to reduce the hours of work. The State attempts to pass legislation for that purpose, and in many cases the same State on the other hand gives money to people in order that they may employ the time, which

they cannot employ in industry, on activity which may be just as harmful to other people as if they had worked in industries. There is a lack of logic in the general social policy because the problem has not been sufficiently understood.

I have no definite opinion on the subject at all. I find it most puzzling. I only hope that the discussion which will follow will show more aspects, more problems, not mentioned either by the authors of the two papers or by myself, and that the result will be that we all agree that some practical steps in investigation are desirable. It is my intention as far as possible to continue that series of articles which we have started in the *International Labour Review*. The first thing we shall do will be to ask Dr. Hood to write us an article for the United States, which would supplement very well the article we have on Germany and the one we are about to publish on England. If any one of you would like to write similar articles describing the situation of your own country, and at the same time contributing to the general discussion of the subject, I shall be very glad to discuss the matter with you. I think I ought to make one definite practical proposal, viz. that, as somebody has to make a start, Dr. Krause should get into touch with Dr. Hood and with anybody else who would like to join, and that they should correspond about the terminology.

I. DE ARLANDIS, *Madrid, Spain.*

Dr. Krause has said that many workmen prefer living in the country, because living in the country is less expensive for them. I shall only point out here that experience from Germany shows that people who are moving out from the radius of the towns, especially of Berlin, often do so to escape the municipal taxes. May I ask Dr. Hood whether the same thing is observed in America and whether there has been any study made of the influence which 'moving back to the country' has on the municipal budget, on the income of the town, and also on the rents of the houses, and on the activity of the building industry, communication-system, and so on?

Reference was made to the belief that this type of industrial worker, who works in the town and gets a part of his income from his garden, would disappear; that the new tendency was for all the workmen to think in terms of money, and for the value of his work to be translated into money. There is, however, a very important thing which might be pointed out both on to-day's discussion and on the discussion of Farm Organization. In Germany and in quite a lot of the European countries, where there has been an inflation, people have lost their

faith in their monetary system and in the State's payments. They prefer, therefore, to possess a small property of their own, the 'concrete' to the doubtful value of the money they receive for their work. I understand that this is quite a continental point of view, for the English have not experienced an inflation and still trust their monetary system. They have also the Empire behind them. It should also be added that these little farm households are not utilized only by workmen, but also by middle-class men; for instance in Germany, clerks, teachers, professors, and physicians. I believe that there is the same idea behind it; the 'sure' investment of their little capital or savings. They trust the land, but they do not trust their currency system.

R. HENDERSON, *Seale-Hayne Agricultural College, Devon.*

This is a topic upon which there is very great confusion of thought. Indeed, I know of no other subject upon which there is such a tremendous amount of confusion, and this is the more remarkable for we have been discussing it for at least twenty years. As a body of economists we do not appear to have got down to the subject in any proper manner, and it is evident that there is no real understanding of the problems involved as between one country and another, or even within national borders. In England, however, a certain amount of work has been done, and inquiry has been made regarding the extent to which it is economically and socially desirable to develop, particularly, the smallholdings movement. As a result, many of us who were, only a few years ago, strong upholders of the smallholdings movement have become convinced that the limits within which smallholdings can be developed are very narrow. This applies equally strongly to the part-time farm. There are, of course, still some people who have faith in the extension of smallholdings, &c., as being a means of relieving our unemployment problem. Reference is often made to the placing of people on the land who have failed to maintain their position in industry. It is advocated that these human residues of industry should be put upon the land with the object of producing more food. Now I am greatly concerned about this for, having myself been an agricultural worker, I know what an extension of the numbers already in agricultural production would mean. The crux of the matter is that, by increasing the number employed in agriculture, it does not follow that the total agricultural income will be increased. Indeed total income might be lowered. The result then is that a stationary or even smaller total agricultural income has to be distributed over a larger number of

people, which must inevitably lead to a lowered standard of living for all concerned. Assuming that we bring 500,000 of our unemployed people back to the land, we may increase the total product, but, with markets already glutted, there is no certainty that the agricultural income will be increased, or that the new agricultural workers will be any better off than they were when living on unemployment insurance benefit. The only way of increasing the standard of living in agriculture is by increasing incomes, and this cannot be done simply by increasing the numbers engaged in agriculture. Professor Ashby pointed this out, but whether he was understood or not I am not quite so sure. I think it is perfectly true to say that, where agricultural populations tend to increase relatively to the industrial populations, standards of living in agriculture will deteriorate rather than improve.

I have been very interested in the several points of view put forward, and I can quite see that conditions are different in this country from what they are in other countries. At the same time I tell you to your faces that you have not thoroughly investigated the problem about which you talk. I am not satisfied that we are tackling these problems in the right way. There has been a certain looseness, and a certain tendency to generalize rather than to probe and investigate, running right throughout the discussion. The point raised by Señora de Arlandis, indicating that people in other countries may have more faith in their land than their currencies, is probably one of the most interesting, and it may explain the attitude of some of those who have taken part in the discussion, and also the obvious differences between the points of view of representatives from abroad and those of Great Britain. I think probably the point is most important because it indicates national psychologies. People in certain countries may prefer to put themselves and their money into the land because they feel that is safest, but in this country the difference lies in the fact that if people were offered a sum of money or an equivalent amount of land they would almost without exception choose to have cash. In other words, we have as much, or more, faith in our currency than we have in the land. The point raised, should further investigation be made, may throw a great deal of light on the problem. There may, at the same time, be many other reasons accounting for the differences in the systems of land holding and land policies as between this country and other countries.

Several people have attempted to extol the life and conditions of living on the smallholding in various countries. Personally I have much experience of farm labour on large farms in England and some

direct experience of work and life on a smallholding elsewhere, and, if I had to choose between the two, my choice would always be that of being a labourer on the large farm. I would readily sacrifice that so-called independence—I doubt whether it is independence at all—which the smallholder is supposed to enjoy, for the sake of the standard of living and the other things that the ordinary worker enjoys in this country.

Probably my remarks have had more bearing on yesterday's discussion, but they would not have been greatly varied had I confined myself rigidly to part-time holdings.

The President, L. K. ELMHIRST.

May I suggest before we go on with the discussion that those who take part in it describe or perhaps define, when they begin, the actual nature of whatever it is they are going to speak on. I find that there is a good deal of mixture of epithet. When Mr. Henderson was talking, he was talking about smallholdings. A smallholding is an entirely different thing from the thing our American friend was talking about and I believe what Dr. Krause was talking about. I do not know whether it is to the point, but it may be helpful if I state some of the distinctions in this country. There are workers without any gardens at all, with just a house. Then the next type is a man with an allotment who may travel a mile or more from his house to get to this allotment, a little patch of garden, half or a quarter of the size of this room. Then there is, as in America, the part-time farmer, though not quite the same. In America, he may find a deserted farm and squats on it, and because cars are cheap he goes to and from the town. The smallholder is quite different because he must get the whole of his living from the smallholding. I quite agree with Dr. von Bülow that we do need definition, otherwise we waste a great deal of time fighting one another over different things and calling them by the same name. Will those of you, therefore, who carry on the discussion, just say what type you are talking about. This evening we are not talking about smallholdings. We are talking about part-time farms, though in a lot of other terms that you must define.

G. H. N. PETTIT, *University of Cambridge, England.*

I want to raise one point which is partly to do with allotments and partly to do with part-time holdings. If I understand this discussion rightly, there seems to be an idea in some of the contributors'

minds that the disadvantages of part-time holdings from the purely economic point of view may be outweighed by the benefits to the physical and moral condition of the man who is more or less derelict in the city. Well, I would like to suggest that it is possible to obtain these moral and physical benefits without moving the man out of the city at all, by the very simple expedient of providing him with an allotment. That sort of work has been done on a large scale in this country through the operation of the Allotments Scheme administered by the Quaker Society of Friends. There have been difficulties in this scheme. I was the secretary of a small one once, and we had troubles such as the men eating the seed potatoes which were given out, instead of planting them. I think that in the north of England particularly, these allotments have often been very valuable in giving unemployed men something to think about, some competitive interest amongst themselves, and something they can talk about over their half-pint, and have, therefore, done a lot of good. From the point of view of the general community in a small country like England, such a scheme has big advantages in that one does not cover the landscape with a lot of unsightly part-time holdings.

My impression of the part-time holdings that one sees round London (the type which I think the president means when he speaks of 'squatting on derelict land') is of terrible unsightliness. Large areas near London have been got into a terrible mess from the scenic point of view, through the development of these part-time holdings. That may be rather a curious argument to bring up at this meeting of economists, but I think it is one which should be considered. After all, the tourist industry is quite important in England, and there are relatively large areas of this small country which are being spoilt from a scenic point of view, by indiscriminate development of a ramshackle 'squatter' type of holdings.

W. SEEDORF, *Göttingen, Germany.*

I do not want to claim too much time, but I would like to say a few words, because I too have worked in this field. I speak of the settlement of people living in the country, but working in the industries or in the cities. If we come to England, we Germans in approaching the cities notice the lack of something; it is the lack of a belt of small gardens (*Schrebergärten*, as we call them in German). Only here and there have I noticed the commencement of such a development around English towns. The German worker who is banished to the towns has long since had the wish to own a small

garden, even if he must perhaps travel an hour to get to it. This shows how very much the German worker is attached to the land, how 'land-minded' he is, as I think you say in English. That is also the reason, I think, why many workers stay on the land, although perhaps many workers' wives would like to leave the land and share the comforts of women in the towns.

I think we ought to encourage this clinging of the people to the land for another reason, already mentioned here. If I may speak of myself, I was brought up on a peasant holding and, from the very beginning, was called upon to work, and I deplore nothing more than the fact that I have not the chance to educate my children by work on the land. I can only do that during the holidays. How much greater is the happiness of country children than of city children growing up in narrow streets and in back yards! And how much more efficient a population we could have, in my opinion, if the greatest possible number of our children could grow up in the country! These are the social aspects which have to be mentioned. We have quite extensive experience in Germany of what is here called 'part-time farming', or of something very similar. It is to be found in Westphalia in a certain form of share-tenancy (I do not know whether Dr. Krause has included this form), but it is also to be found everywhere else. I will not deal with this in detail, but it would undoubtedly be of value to study these examples in Germany in all their various forms.

Reference was made to the difficulties that might possibly arise in marketing. The agricultural market which I like best is that in which every one consumes his own produce. Then there are no marketing difficulties. Even if the milk is not produced with the same cleanliness on the holding of the small farmer, the germ content will certainly not be as high in the milk he drinks fresh half an hour after milking as in the milk which is consumed half a day or a day later in the cities. I think there is no cause for anxiety on that score.

The whole matter of part-time farming is one which will be extremely important in the future.

B. VON ZASTROW, *Berlin, Germany.*

The business of suburban settlement has so far only been discussed from the point of view of the man who wants to go to the country-side, from the point of view of agriculture, and from the aspect of competition. But we have not spoken—and I think Dr. de Arlandis very correctly hinted at this—of the effects of settlement on

the finances of the cities and, in general, of the costs arising from this settlement. At the outset, I would like to say that I am a great friend of this settlement. I believe that it must be promoted in every possible way; but, particularly, when we want to support it, we must clearly perceive the difficulties which prevail. The experience in Germany is, as far as I know, very different according as the settlement is developed near large cities or near small towns. In the case of small towns, the problems are much more easily solved. There it is not necessary to establish special means of transport and special services. In addition, the people leaving the smaller towns are not so much accustomed to the achievements of civilization, such as wireless, the pictures, illustrated papers, &c. In the case of the large cities, if such settlements are established—and if they are established the plan must be on a greater scale—they require first of all quite special means of transport, and, as the people must be brought to their work early in the morning and home again in the evening, they will be a great expense for municipal finance, for here we have to deal with a spasmodic form of transport that will be greatly utilized in the early morning and again in the evening. During the day, a housewife or two at the utmost will go into town to do some shopping. The transport is not utilized, and, even with omnibuses, it will not be so easy to handle the traffic, because a considerable volume must be dealt with. Furthermore, the cities may easily be obliged in these difficult locations to build roads, to lay electricity, and perhaps even to provide sanitation for the smaller settlements. These create heavy expenditure for the cities, and, if the question is to be followed up, we must examine by what means these difficulties can be most easily overcome in order to make it possible to accord this benefit to as many people as possible.

G. BAPTIST, *Agricultural Station, Ghent, Belgium.*

I just want to mention a very interesting type of part-time farming that we have in Belgium. We have in various industrial towns little societies that can get money from the Government to buy a piece of land, and on that money they have to pay only very low interest. The land is generally situated a little outside of the city; it is divided up in small portions which have to be let to workers. This system has very big advantages. First, the worker has a system already built up so that he is able to avoid making any big mistakes. Secondly, there is the advantage that it does not compete too much with agriculture, because the worker grows only potatoes and vegetables some of which he would not in any case buy.

G. P. WIBBERLEY, *University College of Wales, Aberystwyth.*

I feel I am hardly competent to speak on any economic matters at a conference such as this, but I would like to bring up just one or two points. I am considering part-time farmers, i.e. those persons who have small farms and produce farm produce for their own consumption, but obtain the main part of their total income from some other source than farming. Now, I think the same problem arises whether these persons merely produce enough for their own needs, or produce just a little extra to sell. The present market for agricultural products in this country—at least the present effective demand—seems to be deficient for the produce already available in this country. If a large-scale movement of part-time farms is developed, then it means the effective demand of the urban population will be decreased. Surely we must remember that, if a large movement like this is developed, a large part of the demand for agricultural and market-gardening products, dairy products, vegetables and things such as these, will be taken away, and the present difficult marketing problems of our farmers will be further increased.

Taking my second point, we find that small producers with just one or two cows producing only a few gallons of milk are a great bugbear to the present marketing scheme, and if we have a vast number of new producers of this type—as would be the case under a large scheme of part-time farms—surely this would increase the administrative difficulties of the present marketing schemes. I feel sure that the present Milk Marketing Board knows that the bringing of 4-cow producers within the Scheme's jurisdiction will cost in administrative expenses more than can be offset by the advantage of having them in the scheme. I would like other speakers in the discussion after this to consider these two points; that under a large scheme of part-time farms administrative difficulties and expenses of organized marketing will be increased, and that in large part the present effective demand for agricultural products will be decreased.

I. DE ARLANDIS, *Madrid, Spain.*

I would like to add just two remarks. Mr. Henderson and Mr. Wibberley said that the part-time farm for workers will have the effect of increasing agricultural production and of decreasing the demand for agricultural products on the market. I do not think so. At least, it is not the tendency in the German system of part-time farming. There, the aim is to give to the industrial permanently employed workers—not to the unemployed men who are

not regarded as the ideal type of part-time farmers—some new additional real income, not in order to raise wages, but to raise his standard of life. He receives real income from his small farm, which he would not have received otherwise. As he receives the same wages as before, there is no less purchasing power for agricultural products in the market. If more industrial products are purchased, new income for industrial workers is created, and this new income could fully compensate for the decreased demand for agricultural products by the part-time farmers.

Part-time farms are quite different from the allotments for unemployed men, which are created in England. I do not agree at all with Mr. Pettit that an allotment given to the unemployed would constitute a solution for unemployment. If even small farmers with experience do not get on in these times, how can an industrial worker, without knowledge of farming, turn from being an unemployed workman to being a successful small farmer?

K. HOOD, *Pennsylvania State College, Pennsylvania, U.S.A.*

I think that some of us who have taken part in the discussion here this evening are becoming unduly excited about something which we cannot avoid. This movement is going to continue even though it results in some conflict with the farmer for a part of his markets and even though there is some difficulty encountered occasionally in regulating the sale of produce from these part-time farms.

I tried to indicate in my paper that my study showed that there are certain economic factors of long-term importance such as the shorter working week, the shorter working day, and the improvement of transportation, which seem to point to the fact that this part-time farming movement and the rural residential movement are both going to continue.

I think that we probably should have spent more time and thought on the discussion of how we are going to make the best of this population development. The farmers to whom I talked see that the movement of city people to rural homes is inevitable, and they are going to co-operate in order to make it as satisfactory as possible.

Two major criticisms of this development were made; namely, the difficulty of regulating the marketing of produce from part-time farms, and the movement of relief cases from the city to the country.

Let us consider the problem of market regulation. To begin with, the 3,000 whom I had the privilege of interviewing were not marketing very much. Practically everything that they raised was for home consumption. In fact, they produced less than one-half

of the food that was required for the family table. Approximately one-half of those studied were marketing nothing at all, and the average value of the produce marketed by this group was less than \$100 per year.

I wonder if an improved financial position and better living for these industrial workers are not more important than the regulation of the sale of three or four pumpkins a year and a few eggs and a quart or two of milk every day. Is it not possible that we have gone a little too far with trying to regulate everything that the farmer sells? We had a Potato Act which was put into effect in the United States and later declared unconstitutional. The original plan called for regulating sales of potatoes down to 5 bushels per farm. This is just about the type of regulation that would be put into effect if we were to regulate the sale of produce from these small part-time farms.

And now let us consider the second criticism. Has this development been characterized by an exodus of people on relief who have gone out to the country and settled on deserted farms in order to escape certain starvation in the city? This may have been true in some sections. I am not trying to make any general statement other than what I have found on these 3,000 part-time farms surveyed. There we found less than 15 per cent. on relief. Some were not on relief for the simple fact that they had in addition to their city employment a small income from the farm, and they were producing a part of their food and fuel needs, which helped to balance the family budget. During 1930, 1931, and 1932 there was a considerable movement of the destitute from the cities to the country. Some of these settled on barren hill-sides and poor land areas and tried rather futilely to eke out a miserable existence from operating 3 or 4 or maybe 10 or 15 acres of rather poor soil. I thought that I was rather careful in pointing out that this type of movement was not a success and should be discouraged at all times. That is why we have tried as far as possible to associate our part-time farming studies with the studies we have made on land utilization. We have found that the man who settled in good agricultural sections and on good soil was the man who was making more of his part-time farming operations than was the man who settled unwisely.

In so far as people on relief have been encouraged to move to the country in order that the city would no longer have to support them, it should be discountenanced, but, as far as I have been able to see, this has not been of any consequence in the movement. Certainly over a long period of years this development is not going to take place because people are starving in the city and because city authorities

are making an effort to move their relief clients into the surrounding rural areas, but because men and women of their own volition want to move to the country because they like country life and because of the advantages of country life which have been enumerated previously.

I was glad to have the president's statement that what we were talking about was part-time farms and not smallholdings where a man makes all his living or tries to make all his living on the farm. The president's definition of a part-time farm was, however, somewhat inaccurate. The part-time farmer is not a man who goes out on deserted farms and squats there and tries to farm. There are a few who do this. Some people become part-time farmers because they try to be full-time farmers, and the farm is too poor to provide an existence. Most of the people settle on a small plot of land and supplement the income from their city jobs by part-time farming activities.

There are several other questions that I would like to discuss. I was interested in Mr. Pettit's discussion of allotments. Had I heard him talk of this two or three weeks ago, I should not have known what he meant, but I have since had the good fortune of travelling through a few European countries and I saw from the train any number of these small garden settlements. I wish that there was some research on this development. Have these people made money? Have they saved money as a result of cultivating these gardens? I think, without having any evidence at my disposal, that in most cases these projects would be very much worth while. There are other advantages, however, to country living besides having a garden. Possibly a person wants some live stock and he should be there to take care of it. Cheaper housing has also been in evidence in the studies made. It is possible that these allotments would prove to be less successful in America than they have been in Europe. I have a feeling that it would be necessary to drive out considerably further than would be economical, unless, of course, we wanted the ride anyhow and did not charge the cost to the garden operation.

Mr. Pettit also suggested the possibility of indiscriminate building of country homes. There is considerable evidence of this in America, but on the whole our industrial workers have built substantial dwellings. The time may come when we will have to have zoning ordinances in our rural residential areas. In a few of the New York counties at the present time, particularly in the areas contiguous to our important cities, we have township zoning ordinances. There it is almost impossible for a person to go out and build a shack alongside of a decent home.

In conclusion, I wish to state that I see this movement as inevitable, and I think our problem as economists is to help these people to locate satisfactorily, to buy wisely, and to produce economically. More research should assist us in answering some of these many perplexing questions which have arisen in this spirited session this evening.

PROBLEMS OF CONSUMPTION OF AGRICULTURAL PRODUCTS

FIRST OPENING PAPER¹

E. P. CATHCART

Regius Professor of Physiology, University of Glasgow

IT is probably better realized by those interested in agriculture than by any other section of the community that 'all flesh is grass' is almost literally true, but it is not always appreciated by those interested in agriculture that the problem of human nutrition, and for that part also the nutrition of the lower animals, is not one solely of a plentiful supply of food materials. It is true, of course, that an ample supply of food is of primary importance, but other factors play important parts. Good nutrition implies far more than a plentiful supply of food. Unless the personal and physical environment is adapted to the needs of the individual it is difficult, if not indeed impossible, to attain optimum nutrition. In some ways those associated with farm stock have a much keener and more vital appreciation of these other factors than many of those primarily concerned with the welfare of mankind. It is not perhaps going too far to say that the leaders of the agricultural community have devoted far more attention and given more brains to the development of agricultural stock than have been given to the physical culture of man. Those who devote their energies to the raising of stock know, for instance, perfectly well that it is impossible to raise good animals from inferior stock, that no matter how well these inferior breeds are fed it is impossible to evolve first-class animals from such stock. In other words, stock-breeders realize that a knowledge of animal eugenics is a real and vital factor in raising the ideal stock.

It is perfectly true that the qualities in the case of man are more varied than those of animals. We require in our ideal man brains as well as physique, but nevertheless the hereditary factor is all important. Good food is a prime necessity, but it cannot work miracles. I am not maintaining here that better food can do nothing, nor advocating a state of *laissez-faire* on the grounds that the diets

¹ Professor Cathcart's paper deals with the problems from the nutritional or physiological standpoint. Professor Forrester's paper which follows deals with the problems from the economic standpoint.

consumed by the average man of limited means are ideal at the moment. Far from it, for, although there may be no actual starvation in this country, there are many who are living on diets which leave much to be desired. But I am stressing the point that before the ideal of a perfect race of man can be attained there are many other factors besides intake of food which must be taken into account.

The fundamental principles involved in the feeding of man are identical with those in the feeding of animals. There must be provided a diet adequate both in quantity and quality. The study of the quantity side is at present very much out of favour. It is held that the quantitative problem is solved if a sufficient amount of energy in proper form be ingested to cover, with perhaps a slight excess, the energy expenditure. The Technical Commission of the League of Nations have stated that the basic calorie (or energy) requirement of an adult, male or female, living an ordinary everyday life in a temperate climate and not engaged in manual work may be covered by the ingestion of 2,400 calories net per day with appropriate supplements for extra manual work done. Personally I am not quite so certain that the quantitative problem has been completely solved. Obviously a certain amount of readily available energy must be supplied to cover the expenditure. But is this a rigid amount? There is more than a suggestion that there is a relation of some kind between the quality of the diet and the quantity required.

When we turn to the consideration of the quality of the diet we can say definitely that it must contain protein, fat, carbohydrate, salts, vitamins, and water. The energy needs are covered by the first three components and more particularly by carbohydrate and fat. Further, a long series of dietary studies, when the foods were selected at random by normal housewives, has shown, on the average, calculating in terms of calories, that approximately 10 per cent. are derived from protein sources, 25 to 30 per cent. from fat, and the remainder from carbohydrate. Incidentally it may be remarked that in our collection of data we have been astonished at the regularity with which untrained housewives so apportion their purchases of the various foodstuffs available that the percentage range just referred to is kept wonderfully constant, especially in the case of protein. In the case of the non-nitrogenous materials it is found that as the income available for expenditure on food increases the percentage of calories derived from fat increases and that from carbohydrate diminishes.

If consideration be directed to the actual amount of the various essentials required by the average man, we enter a realm in which

our lack of knowledge is very marked. The Technical Commission of the League of Nations agreed that the body's need for protein might be covered by an allowance of 1 gramme per kilo of body weight, say by 70 grammes per day for the average man. Our studies showed a range from approximately 60 to 100 grammes with a mean value of about 80 grammes. The Commission refused to lay down any precise figure for fat although judging from our results it would probably be about 100 to 120 grammes per day. Carbohydrate, the most readily available form of energy, which may be regarded as an elastic reserve, is left unfixed.

As regards the non-energy-yielding items of the diet certain figures have been arrived at for calcium, phosphorus, iron, and perhaps iodine, but much work requires yet to be done on these and the many other essential inorganic constituents about which we know next to nothing. It is fortunate in a way that these substances are usually components of many of the ordinary foodstuffs. Again we know that a variety of vitamins are also requisite, but the actual quantitative needs are unknown. Sir F. Gowland Hopkins has stated that the vitamins are best taken in the form in which they exist in natural foodstuffs.

We know little or nothing about the specificity of any of these basic materials, if indeed, except in the case of protein, specificity exists at all. Although so far as I am aware no definite scientific work on which to base our evidence, at least quantitatively, exists, there is a general consensus of opinion, and I believe a correct consensus, that a certain amount of the protein consumed should belong to the class of 'good' or 'first class' protein or protein of high biological value, i.e. proteins in the main derived from animal sources such as meat, milk, or eggs. It is generally accepted that the amount of this protein should form about one-third of the total protein ingested. I may say that our analysis of a large number of diets of those on a very low-income level shows that as a matter of fact the percentage but rarely falls below 40 per cent.

To turn now to a consideration in quantitative terms of what is actually eaten by the various households whose diets have been carefully studied. Mrs. Murray and I have analysed in terms of foodstuffs the diets we collected. We selected for our grouping of the households the expenditure per man per week on food. The following table (Table I) gives a summary of the average consumption in pounds per man per week of some of the commoner foodstuffs in St. Andrews, Cardiff, and Reading.

It will be noted incidentally that the consumption of meat per man

is higher at the various expenditure levels in England than in Scotland despite the fact that the St. Andrews families are drawn from a more mixed and on the whole a higher social level.

TABLE I. *Average Quantities of Foods in lb. consumed per Man per Week*
(Grouping in average expenditure weekly on food)

ST. ANDREWS

	<i>Aver. Exp. on food</i>	<i>Meat</i>	<i>Fish</i>	<i>Bread</i>	<i>Legumes and Cereals</i>	<i>Margarine and Butter</i>	<i>Sugar</i>	<i>Vegs.</i>	<i>Fruit</i>
	<i>s. d.</i>								
I	18 5	3.04	1.26	4.59	1.29	1.84	1.86	4.39	3.17
II	18 0	2.22	0.45	4.96	1.07	1.89	1.58	3.45	3.25
III	13 8	2.43	0.48	5.79	1.12	1.48	2.06	3.36	2.24
IV	12 0	2.17	0.49	5.46	1.27	1.42	1.80	3.69	1.51
V	9 3	1.64	0.34	5.80	0.88	1.23	1.67	2.97	0.73
VI	6 2	1.25	0.44	4.50	0.71	0.99	1.20	2.68	0.30
VII	11 0	1.59	0.66	4.79	1.31	1.50	1.99	4.24	1.44
Av.		2.04	0.49	5.40	1.13	1.42	1.74	3.48	1.54

CARDIFF

	<i>s. d.</i>								
I	6 8	1.38	0.30	7.53	0.81	1.45	1.54	3.19	0.48
II	7 1	1.70	0.31	6.49	0.83	1.44	1.46	3.89	0.80
III	9 3	1.86	0.45	7.47	1.07	1.84	1.63	4.92	0.70
IV	10 2	2.23	0.34	6.11	1.08	1.94	1.84	4.22	1.58
V	12 0	2.48	0.60	5.60	0.93	1.40	1.65	4.79	2.44
Av.		1.73	0.36	6.94	0.90	1.57	1.58	3.92	0.87

READING

	<i>s. d.</i>								
I	5 2	1.68	0.16	5.82	0.74	0.75	1.52	4.01	0.42
II	7 6	1.99	0.29	6.14	1.03	0.96	1.65	6.07	0.72
III	8 5	2.22	0.24	4.59	1.01	1.00	1.50	4.85	1.13
IV	8 11	2.39	0.54	4.04	1.01	1.13	2.15	5.40	2.69
V	9 4	2.05	0.43	5.53	0.96	1.16	2.57	3.70	1.10
Av.		1.92	0.26	5.71	0.91	0.90	1.67	5.00	0.79

I have also given a comparison (Table II) to show the interesting differences which exist in the mode of expenditure of families of like expenditure on food.

The next table (Table III) is of equal interest as it gives some clue to the nature of the appetite of the people and hence of the demands which require to be met by the market. Here the percentage of the total families in the different studies consuming particular items of diet is given.

TABLE II. *Comparison of Groups of approximately Same Expenditure per Man on Food*

		<i>Aver. Exp. on food</i>		<i>Meat</i>	<i>Fish</i>	<i>Bread</i>	<i>Legumes and Cereals</i>	<i>Margarine and Butter</i>	<i>Sugar</i>	<i>Vegs.</i>	<i>Fruit</i>
		<i>s.</i>	<i>d.</i>	<i>lb.</i>	<i>lb.</i>	<i>lb.</i>	<i>lb.</i>	<i>lb.</i>	<i>lb.</i>	<i>lb.</i>	<i>lb.</i>
I.	A. IV*	12	0	2.17	0.49	5.46	1.27	1.42	1.80	3.69	1.51
	C. V	12	0	2.48	0.60	5.60	0.93	1.40	1.65	4.79	2.44
II.	A. V	9	3	1.64	0.34	5.80	0.88	1.23	1.67	2.97	0.73
	C. III	9	3	1.86	0.45	7.47	1.07	1.84	1.63	4.92	0.70
	R. V	9	4	2.05	0.43	5.53	0.96	1.16	2.57	3.70	1.10
III.	A. VI	6	2	1.25	0.44	4.50	0.71	0.99	1.20	2.68	0.30
	C. I	6	8	1.38	0.30	7.53	0.81	1.45	1.54	3.19	0.48

* The symbols in this column refer to the groups in Table I; e.g. A. IV stands for St. Andrews Group IV and C.V. stands for Cardiff Group V.

TABLE III. *Percentage of Families in the Various Studies consuming Particular Items of Diet*

	<i>St. Andrews</i>				<i>Glasgow</i>	
	<i>Total</i>	<i>Groups IV, V, and VI</i>			<i>1933</i>	<i>1911</i>
Beef	98.7	98.2	90.6	96.5	100	100
Mutton	45.0	42.7	60.4	54.4	50	66.7
Pork	16.8	13.6	22.6	19.3	8.3	16.7
Veal	1.3	0.0	1.9	0.0	8.3	4.2
Ham and Bacon	92.6	90.9	94.3	70.4	83.0	70.8
Sausages	73.8	78.2	37.7	54.4	100	66.7
Fresh Fish	68.5	64.5	50.9	49.1	75.0	87.5
Butter	88.6	85.5	94.3	61.4	33.3	100
Margarine	67.8	71.8	56.6	94.7	91.7	0.0
Eggs	98.7	98.2	88.7	56.1	91.7	83.4
Cheese	74.5	71.8	90.6	82.5	83.0	70.8
White Bread	100	100	100	100	100	100
Brown Bread	41.6	30.9	9.4	5.3	25.0	0.0
'Tea' Bread	95.3	93.6	58.5	63.1	66.7	66.7
Oatmeal	75.8	71.8	17.0	44.0	58.3	95.8
Potatoes	100	100	100	100	100	100
Root Vegetables	96.0	96.4	60.4	89.5	91.7	79.2
Leafy Vegetables	53.7	49.1	92.6	100	75.0	45.8
Fresh Fruit	79.2	74.5	75.5	82.5	75.0	0.0

Two points are especially worthy of note in Table III. The first is that St. Andrews is recorded as percentage of total families and also as percentage of total families belonging to groups IV, V, and VI, the groups in this study which approximate most closely to the groups in the Cardiff and Reading studies. The second is that two short studies carried out in Glasgow, one in 1911 and the other in 1933, are included.

It is very clear from this table that beef is easily the most highly prized meat. Considering the availability and relative cheapness of imported mutton and lamb it is curious that the consumption should be so low on the average. The Glasgow figures would even suggest that mutton has gone out of favour, as although in 1911 the market did not have the same supplies of imported meat the consumption was definitely higher than in 1933. It is also interesting to note how much more popular sausages are in Scotland. The consumption of fresh fish is also of interest, as despite the fact that both St. Andrews and Cardiff are sea-coast towns the use of fish is low whilst that of an inland town like Reading is astonishingly high.

As regards butter and margarine it will be noted that in the Glasgow 1911 study all the families ate butter, and none of them margarine, yet in 1933 over 90 per cent. of the families consumed margarine, and only one-third of them butter. Is this due to the immense improvement in the quality of the margarine or to a change in social outlook? I sometimes wonder if all the 1911 families did eat only butter. A family who openly purchased margarine, like those who bought skimmed milk, was looked down upon and would not readily admit such an indiscretion. Two other points are of interest. It will be noted that one-quarter of the 1933 families ate brown bread whereas none of the 1911 families did so, and, secondly, not only is there a very definite rise in the consumption of vegetables, but three-quarters of the 1933 families purchased fresh fruit whereas none of the 1911 families did so. These various points are very strong pieces of evidence that a steady change is taking place in the dietary outlook of families even with very low incomes.

There is another question with a marked economic bearing. How much of the foodstuffs purchased are actually eaten? What is the extent of the loss? There are three types of loss: (1) the loss incurred between the purchase and cooking, (2) that in cooking, serving, and eating, and (3) the loss due to incomplete utilization in the body.

Part of the first loss may be due to losses in preparation quite apart, for instance, from the washing off of the soil almost inevitably

purchased with potatoes. The following table (Table IV) was compiled from data kindly supplied to me by Miss Aitken of the Glasgow College of Domestic Science.

TABLE IV. *Percentage Loss calculated on the Basis of Weight of Foodstuff before Cooking*

<i>Foodstuff</i>	<i>No. of samples</i>	<i>Loss in preparation (trimming)</i>	<i>Residue</i>
Beef (Sirloin) . . .	18	2.7	12.5
Mutton (Leg) . . .	26	0.8	12.4
Veal (Leg) . . .	18	0.5	21.7
Pork (Loin) . . .	10	0.4	9.96
Steak (Fillet) . . .	26	0.7	..
Cod (Middle cut) . . .	5	..	10.2
Cod (Tail cut) . . .	8	..	17.0
Cod (Steak) . . .	15	..	..
Haddock (Fillet) . . .	14	..	..
Sole (Fillet) . . .	16	..	..
Potatoes (Skinned) . . .	14	23.9	..
Potatoes (Baked in skin) . . .	3	..	?
Brussel Sprouts . . .	14	25.5	..
Cabbage (Winter) . . .	7	29.7	..
Cabbage (Summer) . . .	18	27.3	..
Onions . . .	25	10.1	..
Turnips . . .	21	31.0	..
Carrots . . .	23	27.1	..
Cauliflowers . . .	21	37.8	..

It will be noted that in the case of meat the losses during preparation may be regarded as negligible, but, on the other hand, depending on the cut, there may be quite definite amounts of refuse in the shape of bone, whereas in the case of vegetables the principal loss, which may be very large, depending on the season and the condition of the purchased material, e.g. old potatoes, takes place during the preparation for cooking.

Mrs. Murray and I have been able to obtain some insight into the nature of the household losses, as in the dietary surveys all the discarded material for the week of the study was carefully collected in pails specially provided. Some of the loss is inevitable, the material being non-edible, some of it preventable. The inevitable loss depends solely on the nature of the foodstuffs consumed. It is interesting to note that the much maligned tinned foods give rise to less inevitable loss than do many of the ordinary foodstuffs. As regards the loss of edible material it depends in part on the nature, and to some extent

the quality, of the food, but in greater part on the habits of the housewife and her family. The following table (Table V) gives the percentage loss of the total calories purchased in the form of refuse and

TABLE V. *Percentage of Total Calories purchased as Food lost by Housewife in Form of Refuse and Waste*

Family	Series	
	I	II
1	5.7	5.6
2	2.5	2.8
3	4.4	2.9
4	2.1	2.4
5	1.9	1.9
6	2.7	6.2
7	1.2	1.4
8	1.9	1.5
9	2.4	1.9
10	1.9	2.8
11	5.0	4.9
12	4.3	1.4
13	4.4	3.7
14	3.3	1.6
15	2.7	4.2
16	3.2	3.2
17	3.3	2.8
18	4.5	3.0
19	1.5	0.7
20	4.2	2.1
21	2.3	3.0
22	0.8	1.9
23	0.4	1.7
24	3.3	1.5
25	2.3	3.9
26	3.9	2.5
27	2.8	4.8
28	0.9	0.8
29	1.8	3.0
30	2.6	1.4
31	2.4	2.0
32	0.6	1.4
Mean and P.E.	2.7±0.16	2.6±0.16
S.D. and P.E.	1.3456±0.1135	1.3438±0.1133

waste as determined by our analysis of the contents of the waste-pail of the household.

This table is particularly interesting as it gives the result of duplicated analyses at an interval of six months. It shows that the actual loss is remarkably small with an average of just over 2.5 per cent. The percentage range of loss is from 0.4 to 6.2 per cent. It is, moreover, remarkable that the agreement between the two studies is so

astonishingly close both as to mean and standard deviation. The table also shows in the individual families that as a rule if the loss is low or high in one study it is low or high in the other.

Finally there is the fact, well recognized by agricultural economists, which tells against any cast-iron cost of living standard, that

TABLE VI. *Range in Lowest Retail Prices on a Given Date in March 1935 in 35 Centres in Scotland*

Commodity*	Price range in pence per lb.	Cost in		
		A†	B†	C†
Butter . . .	10 — 16	10	16	12
Margarine . . .	3½ — 8	4	6	6
Jam . . .	3 — 8½	3	4½	7
Tea . . .	10 — 28	16	24	20
Mutton . . .	6 — 16	6	12	14
Beef . . .	4 — 14	4	10	12
Bacon . . .	8 — 18	9	14	12
Sausages . . .	5 — 12	5	8	12
Mince . . .	3½ — 16	3½	12	16
Cheese . . .	4 — 11	4	9	11
Potatoes (stone) . . .	4½ — 10	5	6	5

* Bread, flour, sugar, and milk are not included in the table as there was little variation in the prices.

† A = a city. B = a village about 20 miles from A.
C = a small country town.

the prices of common articles of diet are subject to a wide range of variation not merely from seasonal but also from geographical considerations. The above table (Table VI) gives the result of a brief inquiry I had made for another purpose, which clearly shows the influence of the geographical factor.

I hope I have managed to give you a brief outline of the physiological needs of the human organism and the mode of their satisfaction. I have already stated that many of the diets are not ideal. How is the ordinary housewife who has to go into the open market and make her purchases from the wide variety of foodstuffs offered for sale to be assisted in her choice? One hears repeated demands that the housewife should be more highly educated regarding the composition and the calorific value of foodstuffs. As I have already mentioned we have been astonished how well the average housewife seems to buy by mere instinct. True she perhaps often makes inferior purchases or more commonly tends to buy expensive cuts of meat when less expensive cuts would more than suffice, but I am convinced if the average woman concentrated on a strict academic conception of dietetics the chances are she would not do so well.

She would probably become 'food conscious', a lamentable and dangerous state. Nevertheless, it is true that many valuable foodstuffs are neglected. It is astonishing, for example, that more use is not made of fish and more particularly of herrings; that cheese is not eaten in greater amount; that skimmed milk either in liquid or dried form is practically ignored. Yet all these foodstuffs are excellent sources of first-class protein and some of the most valuable of the inorganic constituents. It is largely a matter of suitable education—education I mean suited to the skill and intelligence of those who require the help. They must be trained in marketing so that they are not hidebound by tradition. Tradition and lack of imagination are tremendous handicaps. And intimately associated with improved marketing is a better knowledge of simple cooking.

PROBLEMS OF CONSUMPTION OF AGRICULTURAL PRODUCTS

SECOND OPENING PAPER¹

R. B. FORRESTER

University College of Wales, Aberystwyth

THERE has been within recent years a considerable output of literature bearing upon the consumption of food by individuals, by different classes, and by different communities. On its economic side this work may be briefly described from three points of view:

1. Investigations have been made primarily from the standpoint of business expansion such as studies of the market for particular commodities, the characteristics of these markets, the manipulation of demand by means of sales methods, of publicity work, and of efforts to change the consumers' purchasing habits; this would include the efforts of individual firms, industries, and trades to urge upon the community special forms of consumption or their own substitutes for established articles of consumption. Such work often involves an extensive and detailed knowledge of the economic position of different classes in a community and of the characteristics of the standard of living in different parts of a country.

2. Numerous and important social surveys have been undertaken; in Great Britain the pioneer work was Charles Booth's survey of poverty in London under the title *Life and Labour of the People in London* (1889-91); the *New Survey of London Life and Labour* published its first volume in 1930, while the Merseyside Social Survey was completed in 1934; there are a number of local social surveys such as that of Southampton by Dr. Ford on similar lines. The aim of such efforts is not primarily to collect facts regarding expenditure of certain classes upon food but to collect a wide range of facts relating to social problems and social conditions. The data assembled have usually, however, included family budget studies of a fairly extensive kind, and these are highly relevant to discussions upon the consumption of food.

3. A new and distinctive literature has recently sprung into prominence which deals particularly with the nutritional conditions of various classes and countries, how far they must be deemed inadequate, and what problems are raised by such deficiency of food

¹ See note on page 412.

in the standard of living. It may be said that this work is an attempt to create a new line of approach to social policy; it might be termed the nutritional approach to the problems of poverty. I propose to survey this literature from the standpoint of the economist and to consider the problems which are raised. Examples of this kind of work are the League of Nations reports dealing with the problem of nutrition and public health, the I.L.O. publication *Workers' Nutrition and Social Policy*, Sir John Boyd Orr's survey of adequacy of diet in relation to income, entitled *Food, Health, and Income* (1936), and the book entitled *America's Capacity to Consume*, published by the Brookings Institution (1934).

A useful method of approach is to state the line of thought of one or two of these authors who may be considered representative of this trend and then to consider their position from the standpoint of social and economic policy.

I take first the presentation of the argument given in *America's Capacity to Consume* written by Leven, Moulton, and Warburton. They begin by discussing the amount and character of the total national dividend, its division among different classes, its geographical division, and its growth over periods of time. This leads to a consideration of the incomes of families and of unattached individuals. Special consideration is given to the diversity of the family unit and, as is necessary in the case of the U.S.A., to the characteristics of farm and non-farm families. The third step is to examine the expenditure of family incomes. This is done by the usual method of utilizing the available evidence of family budget studies for different levels of income; much of this material is based upon occupational divisions which are difficult to handle. Special attention is given to the broad division between 'consumption' expenditure, covering food, home maintenance, fuel and light, clothing, and other direct purchases, and on the other hand what is termed saving and investment; in the savings of the community are included both individual and corporate resources set aside for capital expenditure. Such calculations should give the net amount available for expenditure upon consumption goods of all kinds by the different income groups.

On these grounds it is then urged that the consumption expenditure of a very considerable portion of the people of the U.S.A. (42 per cent.) falls far short of any reasonable minimum of adequacy, and it becomes obvious that for all the necessary items of expenditure, output would require to rise by percentages varying from 20 to 30. This would give a minimum of comfort, in which there was no substantial margin of safety. To reach the requirements of a reason-

able standard of living, it would apparently be necessary to increase the production of all kinds of consumers' goods by something like 70 to 80 per cent. The authors comment critically upon the view that productive power outran powers of consumption in the 'gay' twenties of this century in the U.S.A. They submit that there is nothing but irony in the statement of a prominent banker in 1930; 'it is a glorious thing to contemplate that as a nation we have too much, rather than too little'. In fact the total productive equipment of the U.S.A. working full time would not have met the demands which the authors consider necessary to the health and well-being of the people even at the minimum scale.

Second, I take the report entitled *Food, Health, and Income* by Sir John Boyd Orr, which discusses the adequacy of diet in relation to income in Britain.

The survey considers optimum and not minimum dietary requirements; these are defined as 'creating a state of well-being such that no improvement can be effected by a change in the diet'. It is admitted to be difficult to lay down precise and detailed criteria of perfect nutrition, and no reference is made to occupational standards. The stages in presenting the material are:

1. A statement is given regarding the total supplies of food, the expenditure upon food, and its relationship to the national income together with certain calculations as to estimated annual consumption per head of certain foodstuffs both in quantities and calories over periods of time.

2. A division of the community into 6 income groups was made. The average income per individual was taken as a guide, the total income of the family being divided by the number of persons it includes. This method is a departure from the usual way of assessing the family unit in terms of adult units.

3. A study of family budget data was made to obtain expenditure upon particular foods at different income levels. This calculation duly weighted for the different income groups should coincide with the national consumption. The conclusions reached were that the consumption of flour and potatoes was remarkably uniform in all groups; cheese and the fats reached their highest consumption in the middle groups; and the consumption of most other foodstuffs rose with income.

4. An analysis of the diets of each group was made to test the adequacy of the constituents to maintain health. Assuming the validity of the standards used, it appeared that the diet of Group I, comprising $4\frac{1}{2}$ million persons, is deficient in all the constituents

considered necessary; Group II, comprising 9 millions, is adequate only in total proteins and total fat; Group III, comprising 9 millions, is adequate in energy value, protein, and fat, but below standard in vitamins and minerals; Group IV, comprising 9 millions, is adequate in iron, phosphorus, and vitamins, but probably deficient in calcium; Group V, comprising 9 millions, has an ample margin of safety in everything with the possible exception of calcium; Group VI, comprising $4\frac{1}{2}$ millions, exceeds the standard requirements in every case.

5. It can thus be argued that 50 per cent. of the population fall below standard. To make the diet of the deficiency groups equal to that of Group IV which is deemed adequate would involve increases varying from 12 to 25 per cent. in the consumption of the more expensive foods such as milk, eggs, butter, fruit, vegetables, and meat.

It is not the purpose of this paper to make any criticism of the studies which have been described, but simply to assume that they represent the trend of nutrition study, and to define from an economic point of view the problem they state.

It is clear that the conclusion to which they point is that to obtain adequate diet large numbers of the people in highly developed industrial countries need more income, even if all allowances are made for badly directed expenditure and deliberate under-expenditure. It has long been a commonplace of economic thought that the main cause of inadequate food supply and inadequate housing is not so much an ineffective use of available incomes as the insufficiency of such incomes, however wisely spent, to provide the standards which the experts deem essential for health and well-being.

To keep this discussion within reasonable compass, attention will, however, be confined to certain lines of policy which may be deemed relevant to the increase required in the consumption of food.

First, it should be borne in mind that if the relation between incomes and prices were to raise the real incomes of the relatively poor, either through incomes rising while prices remained stable, or through prices falling while incomes remained constant, increase in purchasing power would only be partly spent in remedying deficiencies in dietary, since people would attempt to increase their satisfactions on all items in the standard of living and not merely on food. It would require some specific measure of public intervention to secure the whole of the increase for food expenditure. Further, any fall in agricultural prices should tend to extend demand for food as a whole, but much depends upon the movements in the price of other things deemed necessary. The rent item has often attracted the attention of social investigators and has been regarded by some of

them as a serious limiting factor upon food expenditure; in large cities it is often in the nature of a large first charge upon incomes. If it be assumed that relatively low prices of foodstuffs are a basic factor in expanding the capacity of workers' families to buy the food considered necessary, then the importance of certain supply factors affecting price calls for assessment.

Production costs may fall through the influence of constructive ideas upon the efficiency of agriculture. Changing technique with lower real costs of output is the most familiar feature of this process. It must always be a matter of uncertainty how far constructive ideas will lower costs in any generation; historical record suggests that the last century has been notable for the influence of the Law of Increasing Returns in agricultural pursuits rather than for any tendency to Diminishing Returns. A point about the present position which complicates the issue is that nutritionists, and in fact the public themselves, lay increased emphasis upon a changed kind of output. It is the expansion of the supply of protective foods such as milk, meat, fruit, butter, &c., which is required; these have relatively high real costs of production and do not appear as yet to yield opportunities of lowering costs to the same extent as crop production. Changes in the whole productive organization of agriculture may also be involved in efforts to lower costs.

An influence upon prices which has recently attracted widespread attention in many countries is market organization, often termed distributive costs. It is not possible to survey here the large mass of services, such as assembling, storing, grading, transport, finance, manufacture, retailing, which are covered by the term distribution, but it is clear that, interpreting this term even in a narrow sense, the growth of services between the producer and the final consumer has been one of the most characteristic features of recent economic development; such services consist mainly of labour, and the costs are such as often exceed the producers' costs for an article. Whether it is worth while for the consumer to pay for all these services or whether the present organization can be made capable of rendering cheaper service is a matter of trial; there have been notable changes within the last few years both in retail trading, in producers' marketing, in transport, and so on; it can scarcely be said that the law of substitution is not exerting steady pressure; on the other hand, the influence of monopoly and monopolistic ideas has become more obvious, and it may be necessary to consider whether the supply of the essentials of the people's food supply should not be considered a public utility service.

A further factor which could be used to keep prices reasonably near to world levels is a country's commercial, agricultural, and fiscal policy. It cannot be said that recent experience affords any ground for thinking that either European or American countries intend to move in this direction. Most countries are attempting to insulate their agricultural and often their other major industries from world influences, indirect taxation has increased, and the revenue from such taxes is deemed essential by many Governments. If it were to become possible to trade more freely in certain food products by international agreement, a factor favourable to better nutrition would be set in motion.

Turning from certain factors affecting supply price, a brief reference may be made to those lines of social policy designed to raise minimum levels of real income. It is clear greater national efficiency leading to a greater national dividend will favourably influence consumption; the whole code of social legislation embodying social insurance, Trade Boards, collective wage bargains, together with the large transfers of wealth by taxation and similar means from the relatively rich to the relatively poor, embodies a policy which increases the purchasing power of the relatively poor. No doubt such policies depend for their continuance upon the maintenance of the national dividend from which the transfers are drawn.

Much of this discussion may savour to some as belonging to what is known as the economist's conception of the 'long period' effect on nutrition rather than of practical effort. The State or other agency may simply provide better food or additional food for those who are believed to be under-nourished. Such methods may take the form of the provision of milk for school children, the distribution of relief in kind or by food cards, and so on. Reference may be made to a few special cases within this somewhat extensive field of social endeavour.

In so far as members of the lower income groups fail to obtain as high a food value from their expenditure as would be possible by other methods, educational efforts may be used to reshape and alter dietary habits, for example to strengthen the recent tendency towards increased consumption of milk, fruit, vegetables, and other protective foods.

A further field which seems to deserve exploration and experimentation is that covered by the unfortunate term 'mass feeding' or collective feeding. There is a long tradition in most countries of collective feeding in hotels, institutions, canteens, boarding establishments, colleges, and so on; employers have often specialized in

the creation of restaurants and cafeteria for their staffs. Systematic collective feeding has so often been associated with distress measures that this may have prevented attempts to try out the plan on a reasonable economic basis. It is, of course, true that few people in this country would care to take all their meals in a restaurant, but, from the nutritional standpoint, it would often be enough if they were able to eat one good meal in such a club. Such quasi-public bodies might buy cheaply and should have certain economies of large output to help them. The idea has the great merit that it might be developed without any eleemosynary tinge.

A last conception which has recently been given prominence is that of separating markets so that a special price may be charged in each market. In so far as differences in the prices charged for the commodity are due to differences in quality, such separation of markets can exist under competitive conditions. The essence of the scheme, however, is really monopolistic and consists in so separating consumers' markets that one group may be charged one price while another group is charged a different price for exactly the same commodity. The conditions most favourable to this form of charging are (1) monopolistic control of supply, (2) no amount of the commodity sold in one market should be capable of transfer to another, and (3) no demand which should be met in one market should be capable of transfer to another.

The illustrations of this form of charging usually given are the services of doctors, barristers, dentists, and others. A medical man's offer to charge any one set of persons less than any other set cannot lead to the one set becoming middlemen for the services which the other set desires. If doctors charge less to poor people than to richer people, this does not lead to rich people becoming poor in order to obtain cheap doctoring. Cases can also be found of large semi-monopolistic companies which charge different prices to different markets and even to different customers.

How far such a method of price discrimination could be applied to food products sold to different income classes in the community might be considered. The theory would be to sell cheaply to low-income groups and at higher levels to those with higher purchasing power. Few cases are likely to be found which meet the conditions outlined above. That of milk comes at once to mind. The sale of milk in this country has always taken place in multiple markets, namely, for fluid milk, cream, butter, cheese, condensed milk, and milk powder. It has been usual to charge a relatively high price in the fluid milk market to make up for low levels in the manufactured

milk markets. The fluid milk price has been kept relatively high, and recently there has been an attempt to create special markets for surplus at levels lower than the standard rates but higher than the rates for manufactured milk. The unemployed in certain areas might be singled out as a special group, but the conditions of transferability may make this plan difficult to work; even in the case of school children being provided with cheap supplies of milk, the suggestion has been made that it cuts down their home supply and is not a net addition to their dietary.

The real difficulty lies in getting a clear and workable demarcation between markets which would permit of a policy of price discrimination if that were thought desirable. The aim of the monopolist is, of course, not to make his sales less remunerative but to make up on his high price sales anything he loses in the cheaper market; it seems unlikely that this could be arranged in the case of milk.

While the 'New Nutrition' has no doubt stimulated public interest in the relationship between low purchasing power and food consumption and while it has made clearer the serious deficiencies of dietary of a large proportion of the populations of different countries, it seems difficult to say that it represents a new approach to problems of poverty.

These are questions of available real incomes and involve a consideration of the methods and policies by which the incomes, particularly of the relatively poor, may be increased.

DISCUSSION

F. L. MACDOUGAL, *Australia House, London.*

I am very sorry to have missed Professor Cathcart's paper this morning and I only arrived in the middle of Professor Forrester's paper, but I had had the good fortune to be able to read the draft of Professor Forrester's paper. I want to suggest to the Conference that the only rational solution of the world's agricultural problems is to increase consumption, and I think that this statement can be put forward quite unhesitatingly for four main reasons. First of all we are now all of us aware of the evidence of a great increase in productive capacity of agriculture throughout the world. We have had the evidence of the existence of surpluses, but, much more important than that, we are all aware of the immense advances which have been made by the impact of biological science upon agriculture. There has been great progress in the science of plant and animal nutrition. There has been progress in almost all lines of

agricultural technique, but probably much the most important advance affecting the productive capacity of world agriculture has been the achievements of the plant breeder. It is not necessary for me to go into that in the slightest, for you are all aware that the new wheats, the new sugars, the new root crops, the new grasses, and legumes, which are now available to farmers—available probably for almost every type of soil and climate—have enormously increased the productive capacity of the world, and yet we are still only at the beginning of what can be achieved through the application of science to agriculture.

That is the first evidence. The second evidence is the evidence of under-nutrition. Again it is unnecessary here to go into it at any length. We have the evidence that has been so admirably arrayed in the report produced at the International Labour Office, under the title of *Workers' Nutrition and Social Policy*, the reports of the League of Nations Committee, and the report of Sir John Orr on conditions in this country, to which Professor Forrester made reference in his paper. I think we can sum up the evidence in this way, that in all countries without exception the consumption of protective foods falls far below the desirable level, whereas in many countries the total consumption of all food, whether protective or merely energy producing, is too low.

The third set of reasons are the social evidences. I just want to suggest to the Conference quite briefly that the spread throughout ever-widening circles of the community of the knowledge of the world's ability to produce more, to produce all that we require, must inevitably lead to a growing insistence in the demand that every one should be able to receive something approximating towards an optimum diet. Failure by the nations to realize this position must inevitably lead to social unrest.

The fourth reason is an international one. It is quite legitimate to suggest to this Conference that the most hopeful method of improving the political relations between countries is through bringing about a revival of world trade. A revival of world trade, after all, very largely depends upon the resuscitation of the purchasing power of the agricultural exporting countries, whether those countries are in Europe or overseas. If we take the countries which are dependent for the power to purchase manufactured goods upon their exports of primary products, whether agricultural or mining products, we find that those countries have not less than 80 per cent. of the world's population, so that the revival of the purchasing power of the agricultural countries is probably the key to the revival

of world trade. I should like, extremely briefly, to refer here to the position of Australia which is typical of many other overseas agricultural countries. Australia has commenced only really since the War to change over from a concentration upon extensive agriculture to a beginning with intensive agriculture. Now, without adding a single acre to the area at present under crops or under special grasses, there is no doubt that this intensification of agricultural production which is now going on in Australia would lead to perhaps a doubling of the production of agricultural products. That would make it possible for Australia to export enormously larger quantities than she does to-day of most of her products (not of wool, but leaving wool and wheat on one side), and that without making allowance for fresh settlement of new people on any great scale.

Australia, Argentina, New Zealand, and many other countries look at the world and ask where they can possibly find the markets for this production which they are most anxious to produce. They look at the markets of the United Kingdom, and they see that these markets are very imperfect, but that they are already absorbing a very great deal. They look at the United States of America and see that it is perfectly clear that American agriculture is so important to America and is also capable of such large expansion itself that there is very little possibility of markets there. Then they look at the Far East and they recognize that in the future the East may become an important market for international trade in agricultural products, but it must be in the far future. They come to the conclusion that the one hope would be in Europe.

If we are right in thinking that the main solution of agricultural marketing problems must be increased consumption, it is then necessary to consider the methods whereby increased consumption can be brought about. I think the methods could be summarized under three heads: first, to bring about increased real purchasing ability for the masses, particularly in the industrial countries of the world; secondly, by decreased costs; and, thirdly, by measures of social provision. The method of increasing the real purchasing power of the masses is probably much the most important method, but I rather take it that that is somewhat outside the scope of this discussion. I should like, therefore, to turn to the consideration of the heading of costs.

Decreasing costs might be regarded as falling under two heads: decrease in production costs and decrease in distribution costs. Taking production costs we are, of course, all aware that since the

depression, at least until the last few months, world export prices of agricultural products have been low, in many cases too low to cover the costs even of efficient production in the low-cost producing countries, but the very phrase 'world parity' to-day has hardly any meaning because so very few countries are allowed to obtain their supplies at such prices. I imagine that almost every member of this Conference is familiar with Sir Frederick Leith-Ross's Memorandum which was published as an annex to a report issued by the Economic Committee of the League of Nations last year. That report of Sir Frederick Leith-Ross still merits the closest study, since it shows the tremendous discrepancies between export prices and wholesale prices which are being paid for agricultural goods in many countries. What I want to point out, however, is that even in the countries of low costs, or relatively low costs, there still exists a very great scope for further lowering of costs. Professor Richardson of the Waite Institute in Adelaide, who is a great authority on wheat production in Australia, is responsible for the statement that, if the average farmer in the wheat areas of South Australia was as efficient as the best 10 per cent. in the same areas, the result would be a doubling of the wheat production of South Australia with a very little increase in cost. But after all the main cause of high cost of production from the world point of view is to be found in the national policies of many countries aiming at national self-sufficiency in agricultural production. I am sure that very few people to-day will quarrel with the national determination which is found in every country in the world throughout Europe, in this country, in America, everywhere. The national determination is to maintain a contented peasantry as a basis of national life, and we should all agree that that point of view is sound for social and for political reasons. But if the demand for agricultural products in the world and in these countries was really inelastic, then the existing policies of insulation of the market in order to maintain the agricultural prosperity of the farmers within the frontiers might have some rational justification. But I suggest that there is the clearest evidence that there is a real physiological necessity for demand, particularly for the protective foods, to be greatly increased.

The Governments of the industrial countries which are adopting policies of extreme agrarian protection have before them a perfectly sound alternative, namely, to maintain a prosperous agriculture based on the production of the more perishable forms of the protective foods and to avoid the concentration of effort upon the production of wheat, sugar, and other crops, which can be so much

more easily and readily obtained from the low-cost producing countries whether in Europe or overseas. In the list of the protective foods which science is urging as desirable, we have milk, dairy products, eggs, vegetables, and fresh fruit. It has been shown that if the liquid milk consumption of this country were to be brought up to a reasonable level, not the optimum level which has been urged, but a reasonable level from a physiological point of view, the result would be that it would be necessary to increase the cow population of this country by something like a million. That would mean roughly, I think, about 40 per cent. increase in the dairy herds. It would also mean that the amount of land devoted to the production of grass or other crops for dairying purposes would have to be greatly increased. If we apply that sort of figure to Europe we get quite startling figures. There appears to be any amount of scope, provided the increased demand for the protective foods can be made effective, for the agriculture of Europe and of this country to be quite highly prosperous without the present reliance upon the crops which can be so much more easily obtained from elsewhere.

The opportunity is, therefore, in the hands of the great industrial countries, who are all anxious to export their manufactured goods, to maintain their agriculture, and yet to see a revival of world trade in many of the great agricultural staples. If that is to be done it is quite obvious that the question of production costs must be regarded as a factor influencing agricultural policy, and governments ought deliberately to consider the nutritional condition of their people as one of the factors in their agricultural policy.

Then there is the question of distribution costs. Mr. Forrester has already gone into that question, and I do not want to take up your time by going any further into it in great detail. I only want to point out that although this question of the spread between the price which the producer receives and the price which the consumer pays is a very old story, one which I suppose has been examined in almost all countries, both officially and unofficially, academically and by governments, yet the more we look at it, the more it appears that there is still scope for much more careful, large-scale work. In this country it appears that in certain instances the margin between the producers' and consumers' prices is really very narrow, and that applies to such commodities as butter, cheese, and sugar. On the other hand, when we come to milk, meat, fruit, such as apples and oranges, all the soft fruits, all the fresh vegetables, we find that the margins are quite enormous. All that I can do at this stage is merely

to urge that members of this Conference should give constant attention to the question of economies in the distribution system.

As regards social provision I do not want to take up the time of the Conference except to suggest that, if we really want to bring about a great improvement in national health and at the same time to assist the world agricultural position and the national agricultural position, the question of social provision as a method is well worth the closest study. I think that a further development of the milk-in-schools scheme along some such lines perhaps as those that have been adopted in Scandinavia, where the breakfast for school children has been playing an increasingly important part in nutritional campaigns, would be well worth studying.

I would like in conclusion to say that this Conference would be serving an extraordinarily useful purpose, first from the point of view of national agriculture, secondly from the point of view of international agriculture, and thirdly from the point of view of the revival of world trade, if it were possible for members of the Conference to do everything in their power to assist the further examination of these problems in their own countries.

E. M. H. LLOYD, *Market Supply Committee, London.*

I welcome the opportunity of contributing to this discussion because I believe in the importance of further study of food consumption and food distribution from the point of view not only of health but of agriculture. It is a remarkable fact that, considering that food is one of the main preoccupations of mankind and the mainspring of economic activity, there is only one Food Research Institute in the world. I suggest that this Conference might well signalize the importance of this aspect of agricultural economics by recognizing the existence of a new branch of economics which we might term 'food economics'.

If one tries to picture the programme of research of a World Institute of Food Economics, what is the sort of field that opens up? I suggest that its main task would be to bring together and analyse critically two sets of statistics, each of which is woefully imperfect as it stands but can be constantly improved; on the one hand, estimates of supply based upon production statistics, trade statistics, statistics of stocks, and agricultural estimates of bulk consumption or disappearance, and on the other, the results of individual family budget inquiries and dietary surveys showing what are the actual food habits of the people. It is from the union of those two that we shall gradually advance towards a more accurate measure of this

problem of consumption and demand. Of course, to make full use of family budget inquiries and dietary surveys such as the very interesting ones which Professor Cathcart illustrated to us this morning, we require to know what relation those particular 100 or 1,000 household inquiries bear to the whole population, and there we have to call upon other branches of economic inquiry. We have to go to the statistician who can give us some estimate of the total national dividend and even an estimate of the probable distribution of the total national income and of food expenditures at different income levels.

Then we have to pay regard to national and regional differences and to study seasonal differences. Nearly all these family budgets and dietary surveys are confined to one particular week or fortnight or month, and one cannot generalize from one week's inquiry. By this means we shall gradually begin to learn more about the market for food and in that respect supplement and make use of those specialized market studies, to which Mr. Forrester referred, by advertising agencies and others interested in sales promotion. It will be possible to throw light for the benefit of the economist, particularly the agricultural economist, on consumer purchasing habits, on elasticity of demand and substitution, on saturation points for particular foods, on the potential capacity for increasing consumption of particular foods, and on such important points as the reaction of consumers to variations in quality and methods of preparing particular foodstuffs. All this obviously opens up a vast field of new knowledge which will never be fully comprehended and can only grow gradually if, and when, and to the extent that, its importance is recognized. It is the long-range, fact-finding activity of statisticians and trained economic investigators, and I believe myself that there is a great future for that branch of applied economics which I have suggested we call 'food economics'.

What bearing has this on agriculture? Agricultural economists are to be congratulated in so far as they have emphasized the need for increased consumption rather than restriction of production. But I sometimes feel, listening to the discussion here, that the speakers regard agriculture as primarily a way of life for the producer. That is obviously true, but one must not forget also that the primary end of agriculture is to provide food for the community, and this aspect sometimes tends to be overshadowed. I have already spoken on the need for more research into demand, consumption, and distribution in framing agricultural policy, but I would like to end with one other aspect which I believe is of enormous importance and links up with previous discussions at Bad Eilsen. The question of

under-consumption and over-production is an aspect of the trade cycle, unemployment, and monetary policy. The study of food economics must be related to the study of the trade cycle, and one of the fields for research outside the purely fact-finding and statistical work is an attempt to study food consumption and trade in food in relation to the trade cycle. Food economists will need to co-operate with those studying monetary and economic aspects of the trade cycle in getting an improved diagnosis with a view ultimately to getting better control of these fluctuations.

F. VON BÜLOW, *International Labour Office, Geneva.*

During the discussion reference has been made on several occasions to the report published by the International Labour Office, *Workers' Nutrition and Social Policy*. I took my part in the preparation of that book, and I am still to some extent responsible for the handling of that question by the International Labour Office. I want, therefore, to stress that I speak here absolutely in a private capacity, not involving my Office in any way.

The subject I want to talk upon is the effect of improved nutrition on the situation of agriculture. I have discussed this subject during a year and a half on many occasions and especially with Mr. MacDougall. I must confess that I am not so optimistic with regard to the good effects of such an improvement as he is. I think we have to realize when we examine this question that it is not simply an academic question, but that owing to the influences exerted we stand perhaps at the beginning of definite government policies with regard to the problem. We must, therefore, measure the importance of the movement. If the movement is not going to be important, I do not think there will be any special agricultural problems involved, but, if we are going to see a really organized improvement in the standard of living of the populations, I think we shall have to come to the conclusion that some of its effect on agriculture may be good, but that it may also cause certain difficulties which it is better to consider in time. I had the honour to express my opinion on this subject before the International Commission on Agriculture, meeting in Norway a few weeks ago, and, with your permission, I will repeat shortly the ideas I expressed on that occasion.

It appears from the record of the Technical Committee, to which Professor Cathcart belongs and to which he has made reference, that the hygienists in general consider that from a quantitative point of view the nutrition standard of populations in western and central Europe is satisfactory but that it is lacking in regard to quality. The

study carried out by the International Labour Office and based on family budget inquiries shows that even from the quantitative point of view the situation is not so satisfactory as hygienists seem to believe. Further, it shows, and this is an interesting fact, that with increasing purchasing power the working classes themselves improve their nutrition in the direction wanted by the hygienists. An improvement in the economic conditions of the working classes may, therefore, lead first of all to increases in the quantities consumed but will soon also lead to a change in the qualities. I believe that this fact of the change in the composition of the diet is the most important in the whole matter, as also stressed by Mr. MacDougal. On the other hand the history of agriculture shows us that it is much easier for agriculture to enlarge its production than to change its direction. We cannot think here of agriculture as one big unit, because the consequences of a change in consumption habits work themselves out in each agricultural region and on each individual farm. If we are going to eat less wheat and more vegetables, we cannot expect all the wheat-cultivating regions to become truck-farming. Natural conditions are against that.

If, therefore, a change is taking place with very great speed, it may cause difficulties to certain forms of agriculture. Even during the expansion period of economic wealth during the nineteenth century, it was difficult for agriculture, and especially for certain types of agriculture in Europe, to adapt itself to the new situation. The countries had an opportunity then to make the change which now Mr. MacDougal says may be the result of an improved nutrition, namely, that the more protective foodstuffs are produced in the industrialized districts, and the more calorie-furnishing foodstuffs are produced abroad. The effect on agriculture in Europe at that time was so strong that most countries preferred to protect their agriculture instead of taking advantage of that improvement in the nutrition standard of their populations which really was offered to them. We have all seen that during the post-War discussion of the agricultural crisis the difficulties of wheat producers were explained not only by the increasing production of wheat but also by the changes in consumption habits. It is, therefore, of the greatest importance to agriculture to know, in addition to the natural trend in the consumption habits which would result from improving economic conditions, what measures Governments will take to improve nutrition directly. We do not know yet what these measures will be if the question is tackled in a really organic way on a large scale, not only plans of a wider scope such as milk distribution to

children, to expectant mothers, &c., but also steps to raise the purchasing power of the consumer classes as such, or measures of a general character. What the measures will be, we do not know at all. But the measures taken may, according to their nature, have very different effects on agriculture. There may be measures which will be contradictory to the development which is expected, as in the case of special protective foodstuffs. We have had committees set up in various countries—often as a result of the discussions going on in Geneva—which study the nutrition problem. If we examine the suggestions they intend to make to improve the quality of foodstuffs at the disposal of the population, we shall find in several cases these committees have only got so far as the question of bread in their consideration. They want to assure the population a bread which is a more protective foodstuff than the bread that is baked to-day. This way of looking at the problem may be directly satisfactory to cereal-producing countries, but it is not the development which theoretically has hitherto been advocated. If the population is going to have a more full-wheat bread, a smaller quantity of cereals may be needed for satisfying the consumption. This example shows directly opposite effects to what is expected of the whole movement. Other solutions may be found as for example adding vitamins to margarine.

What all these things show—and this was the conclusion arrived at in Oslo by the International Commission of Agriculture—is that it is most important for agriculture to take an active part in the whole movement for better nutrition and not simply to sit down and wait for the good results of the propaganda and the steps taken by others. I think there is room for active collaboration by agriculture; hygienists ask us to eat more protective foodstuffs, but they give us in fact a large choice in regard to what kinds of foodstuffs are wanted. It ought to be the task of agriculture itself to study what foodstuffs, desirable from the hygienists' point of view, are the most easy to produce and which would cause least disturbance to agriculture in its actual structure.

What role the agricultural economists will have to play in this, I cannot say at present, but I am convinced that their collaboration will be necessary.

HAZEL K. STIEBELING, *Bureau of Home Economics, Washington, D.C.*
U.S.A.

Before contributing the paper which I have prepared for this Conference, I wish to make a few general remarks regarding the subject of to-day's discussion.

In 1886, just fifty years ago, there was published in America the first account of the adequacy of diet of any population group. In the annual report of the Massachusetts Bureau of Statistics of Labor (1886), Prof. Atwater of Wesleyan University gave a summary of the content of the diet of wage earners and its nutritional adequacy in so far as it was then possible to evaluate it. One of his comments is of as much interest to us to-day as it was in 1886: 'It is undeniably true that much money is wasted in the purchase of food which is lacking in the elements of nutrition, and that the income of the working classes might be made far more effective if it were expended in accordance with the results of scientific research.'

Since 1886 there has been much interest in the United States in the content of the diet of various groups of the population. In 1893 Congress appropriated the sum of \$10,000 for the study of human food and human nutrition. The paper which I have prepared gives a brief graphic report of food consumption habits of American village and city dwellers who spend different amounts for food. The upper part of each page of charts indicates the quantities of food purchased at different levels of food expenditure as shown by dietary studies made between 1914 and 1933; at the bottom of each page of charts is a similar array of information from a 1934-5 study of the U.S. Bureau of Home Economics in collaboration with the U.S. Bureau of Labor Statistics.

The preliminary data from the latter study are from records collected in the spring of 1935 from white wage-earning families in industrial centres. Shortly we shall have information on seasonal food consumption habits of city wage-earning families living in different parts of the country and spending at different levels for food. Within a year or so we expect to have the results of another study now in progress showing comparable information on food consumption not only for wage-earning families but also for other occupational groups.

We have computed the nutritive content of the diets described in the graphic report on the basis of average figures on the composition of American food materials and have compared these results with our best estimates of the quantities of various nutrients needed for good nutrition. We find that families who spend more than \$130 *per capita* per year for food (1935 price level) are quite likely to get diets which meet or improve on average minimum requirements for good nutrition. Those that spend between \$100 and \$130 per person per year are somewhat on the border-line. Families who spend less than \$100 per person per year for food are likely to get diets which fail

to meet even minimum requirements in one or more nutritional essentials. American dietaries are usually much better fortified in calories and protein than in calcium and in vitamin B, according to our present standards. I fully agree with Professor Cathcart when he says that we know far too little about nutritional requirements; however, if we can persuade families to take account in their food selection practices of what is known without waiting for precise information, we shall have made decided advance.

Early in his work Professor Atwater was concerned with putting the available information on food values and food costs at the disposal of the public. In 1894 he prepared for publication by the Department of Agriculture the first popular interpretation of laboratory findings on food values and body needs. The popular dissemination of knowledge is a policy followed by the U.S. Department of Agriculture, the State Agricultural Colleges, and the State Experiment Stations. I think you might be interested in the latest publication which we have issued on this subject: *Diets to fit the Family Income* (Farmers' Bulletin 1757, U.S. Department of Agriculture, 1936). This bulletin was prepared for distribution among city housewives who write to the Bureau for information on how to get the most for their food money. It is a popular interpretation of the more technical Circular 296, *Diets at Four Levels of Nutritive Content and Cost*, issued by the Department in 1933. If we compare the diet recommendations in these publications with the information on diet habits presented in the graphic report, we find that in some respects there is considerable divergence between the two. Diets purchased according to the suggested diet plans of the bulletins will yield for \$80 to \$100 per person per year a food supply as good nutritionally as is likely to be purchased for \$130 per person per year by housewives when they follow customary food selection habits. It is very difficult, with present food habits, for people who spend less than \$100 a year to get diets which meet nutritional standards; some city families have too little money to spend for food to secure fully adequate diets through the usual retail outlets, even if they had all present knowledge of food values at their disposal. Many, however, now fail to secure adequate diets for sums which could provide a nutritionally satisfying food supply if it were purchased with due regard to food values, retail prices, and bodily needs.

If every city family could have an adequate diet selected in accordance with present food consumption habits, it would mean an increase in the urban demand for agricultural food products of some-

thing like 20 per cent. over all, with most of the increase in fruits and vegetables other than potatoes and dried legumes, in milk, in butter, eggs, and lean meats. There would probably be very little increase in grain products or in fats other than butter. The charts based on American dietary habits show that with increasing *per capita* expenditures for food there is very little increase in purchases of these items between the lowest and the highest levels of food expenditure studied, whereas there is a fivefold increase in the consumption of eggs and butter, and a sixfold increase in the consumption of succulent vegetables and fruits.

The problem of supplying desirable amounts of protective foods to low-income groups is a difficult one to which economists and administrators should continue to give constructive thought. It is not a question to be resolved in terms of agriculture alone, but calls for a better understanding of all industry and commerce, and particularly of the relationship between agriculture and other kinds of productive activity. It is a matter of great importance because dietary adequacy is closely related to human health and efficiency.

[DR. STIEBELING *then presented to the Conference the following paper:*]

DIETS OF URBAN AND VILLAGE FAMILIES IN THE UNITED STATES:
1914-36.

A knowledge of the food consumption habits of different population groups is needed in dealing with many of our current social and economic problems. The inter-relationship between diet and health is gaining recognition by the public, so that lively interest attends discussions of what constitutes an adequate diet, and how much a suitable food supply costs. The appraisal of present dietary habits in the light of modern knowledge of food and nutrition is basic to educational programmes in food selection. Quantitative information on present food habits is also indispensable in determining the foods to be priced and the weight to be assigned to each in developing cost-of-food indices, and in pricing food budgets. In addition, information regarding consumption at different economic levels serves to indicate the probable shifts in consumption as barriers to free choice are lifted. These are matters of interest to consumer, labour, farm, and business groups, as well as to civic and government agencies.

For more than forty years, the U.S. Department of Agriculture has concerned itself with the content, cost, and nutritional adequacy of American diets, and from time to time has collected detailed information on family food consumption. The U.S. Bureau of

Labor Statistics and other public and private agencies have also collected many data on family food expenditures and on food consumption patterns. Many of the studies on American diets made in the past are not useful in making a complete summary of food consumption, because the data have not been published in sufficient detail. Some reports give information on the quantities of different foods consumed, but not on cost; some present expenditures only; some deal with nutritive value only; some give information only on certain food items rather than on the diet as a whole.

During the twenty-year period 1914-33, six studies of city and village family food consumption have been made from which detailed data were available to the writer on the kind, quantity, and cost of food consumed by individual families. One small study was published in considerable detail. The others are still unpublished or only partially published; but the original records were put at the disposal of the writer. Altogether these six studies furnished 1,020 records. About two-thirds of these records were secured from families of business men and professional workers; about one-sixth were from families of wage-earners; and about one-sixth from low-income, semi-dependent families. Supporting these data there are two averages reported by the U.S. Bureau of Labor Statistics, and representing 12,000 families of wage-earners. One of these averages is from data obtained in 92 cities located in 42 States in 1917-19; the other from a small study made in Detroit, Michigan, in 1929.

All of the materials described above were considered in arriving at an approximation of food consumption trends with changing levels of expenditure for food. Every season of the year and different regions of the country were represented, but not equally well. From these data it appears that families spending comparable amounts for food buy much the same kind of diets regardless of the occupational classification. The diets of families of wage-earners appear to be much more like those of families of professional workers if the levels of expenditure for food are similar than are the diets of families of wage-earners of different economic levels. Because of the relatively small number of dietary records available, all of the data were combined, without reference to type of occupation, to show the effect of level of expenditure for food upon the consumption of different important food groups.

Between December 1934 and March 1936 records of food consumption at each of four quarters of the year were obtained as part of the Bureau of Labor Statistics study of the disbursements of wage-

earners and lower-salaried clerical workers, made for the purpose of revising its cost-of-living indices.¹

The families included in the study of disbursements as a whole were carefully selected to represent a cross-section of the families of employed white wage-earners and lower-salaried clerical workers (in certain sections of the country the study included Negro and Mexican families). All of the families included had one or more workers who worked a minimum of 1,008 hours in at least 36 weeks during the year. An exception was made in the case of families in which the chief wage-earner was employed in an industry distinctly seasonal. Such families were included if the chief earner had employment for $3\frac{1}{2}$ eight-hour days in each of 30 weeks.

Since the data were being obtained primarily for the purpose of providing a basis for indices of living costs, it was important that they should not reflect the distorted spending of families whose incomes have been abnormally low or irregular. On that account, no data were included from families whose incomes were under \$500 a year, or from families who received relief during the year.

The records of weekly food consumption were obtained from 2,746 families included in the large random sample, who were willing to co-operate in this phase of the work. These families were living in 32 cities scattered throughout the United States. It is believed that the group of families willing to keep food records was fairly representative of the group included in the study as a whole.

Over a period of many years the total volume of food disappearing into consumptive channels has been fairly constant, although the relative importance of different groups of food has shifted. For example, there have been decreases in the consumption of grain products, potatoes, and meats, and increases in the consumption of sugar, milk and cream, citrus fruits, and some of the succulent vegetables, such as lettuce, spinach, cauliflower, snap beans, and celery. In the main, these changes have come about fairly gradually. They are due to improved facilities for transportation, storage, and marketing of the more perishable goods and the consequent availability of a wide variety of foods in great abundance, as well as to the emphasis which the newer knowledge of nutrition has placed

¹ Plans for obtaining the information relative to food consumption were made co-operatively by the Bureau of Labor Statistics and the Bureau of Home Economics. The field work was supervised by the Bureau of Labor Statistics. The statistical analysis from the standpoint of the content, nutritive value, and economy of diets was supervised by the Bureau of Home Economics. Both Bureaux conducted their work, in part, as Federal works projects in co-operation with the Works Progress Administration.

on milk, vegetables, and fruit. During the years 1931-3 the apparent consumption of food was about as high as during 1925-9, notwithstanding the great reduction in consumer incomes. There was practically no decrease in the total volume of food produced. In order to move this undiminished volume into consumptive channels, food prices were adjusted to what consumers could pay, and the general level of food consumption was well maintained.

Within a relatively stable national supply there have always been wide variations in the quantity and kinds of food consumed by family groups. In part these variations reflect individual needs, in part acquired food habits, and in part adjustments which are enforced by economic limitations. The very liberal supply of food enjoyed by some groups of the population raises the national average, but does not confer any benefit on those families whose circumstances do not enable them to secure a food supply fostering a full measure of health and efficiency. How great these variations are from family to family can best be learned through studies of the food consumption of individual families.

Each available study or group of studies of family food consumption has been classified by the Bureau of Home Economics according to the amount of money spent for food per person per year. (Food expenditures were adjusted to a common base period by means of the U.S. Bureau of Labor Statistics retail food index.) Families were grouped together that were spending less than \$30 per person per year for food (at January 1934 price level), from \$30 to \$60, from \$60 to \$90, and so on up to those that were spending \$240 or more per person per year for food. The average quantities of the various foods consumed were obtained for all of the families in the study spending comparable amounts for food, and for each class of foods a scatter diagram or a bar diagram has been made showing *per capita* consumption in each study or group of studies.

The first two charts (Charts 1 and 2) show the trend in consumption of fruits and vegetables (other than potatoes and dried legumes) and of meats, both by level of expenditure for food and by the successive periods of time.

The first chart (Chart 1) tells something of the variations in the consumption of vegetables and fruit. Crosses, representing consumption in the decade 1894-1904, are usually near the bottom in each classification by level of expense for food, whereas most of the symbols near the top represent consumption during the period 1925-34. Even in recent times, when the food value of vegetables and fruit has been given more recognition than formerly, only small quantities

CHART 1. ESTIMATED YEARLY PER CAPITA CONSUMPTION OF VEGETABLES
(EXCLUDING POTATOES AND DRIED LEGUMES) AND FRUITS BY NON-FARM
FAMILIES

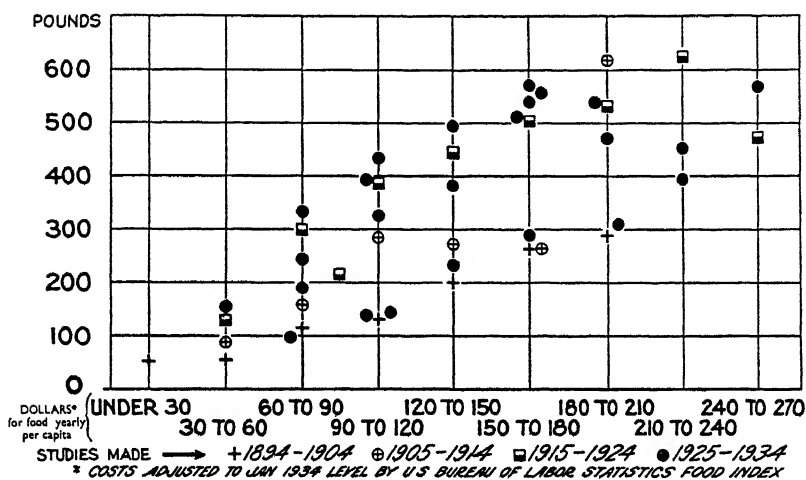
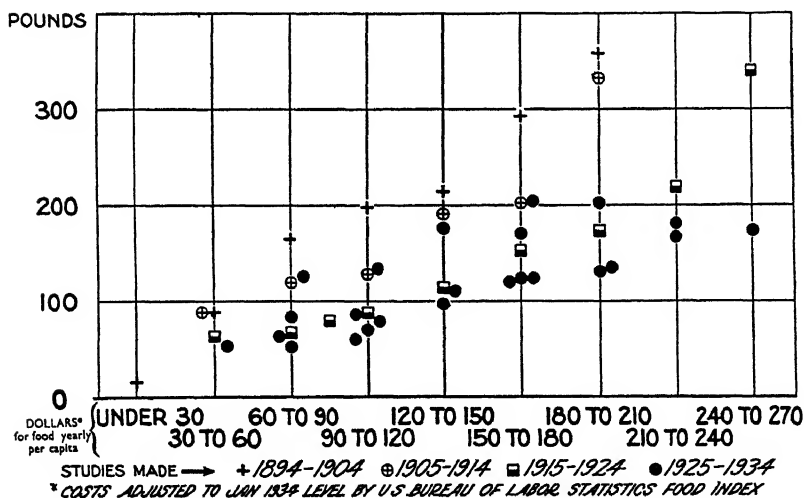


CHART 2. ESTIMATED YEARLY PER CAPITA CONSUMPTION OF LEAN MEAT,
FISH, AND POULTRY BY NON-FARM FAMILIES



(Symbols of different shapes are used to represent studies made in different periods. Crosses represent food consumption in the decade 1894 to 1904; the encircled crosses, food consumption of families studied between 1905 and 1914; the half squares, studies made between 1915 and 1924; and the black circles the studies which were made between 1925 and 1934.)

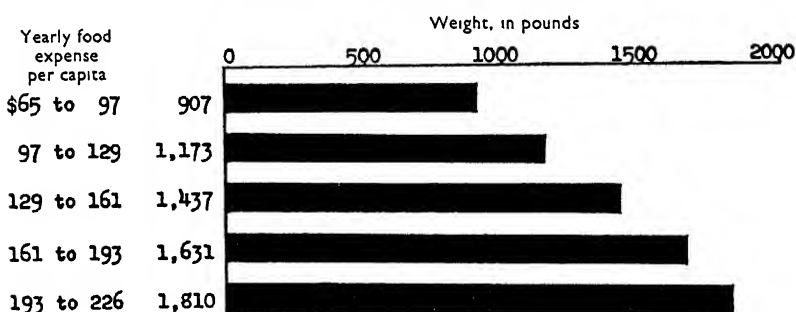
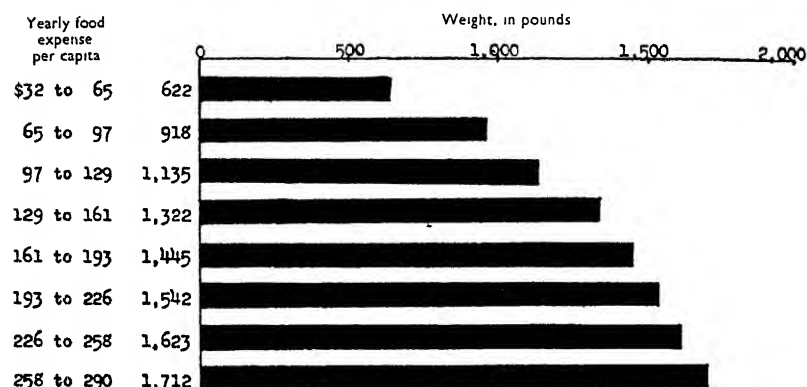
are purchased when there is less than \$60 per person per year for food. But years ago, as well as recently, the trend was the same—more vegetables and fruits when there is more money for food.

CHART 3. WEIGHT OF FOOD CONSUMED

(a) upper part of chart, 1914-33, estimated *per capita* per year non-farm families.¹

(b) lower part of chart, March-May 1935, weekly *per capita* consumption by families of employed wage-earners and salaried workers, multiplied by 52.

¹ Food expenses 1914-33 adjusted to March-May 1935 price level.



The second chart (Chart 2) tells something of the variations in the consumption of lean meats and fish. The crosses, representing consumption in the decade 1894-1904, show a higher than current level of meat consumption at each level of food expenditure, and a *rate* of increase in meat consumption with increasing expenditures for food more accelerated in the earlier decades than during the last.

Both charts show that there is considerable variation in consumption at any one level of expenditure, but the trends are definite and unmistakable.

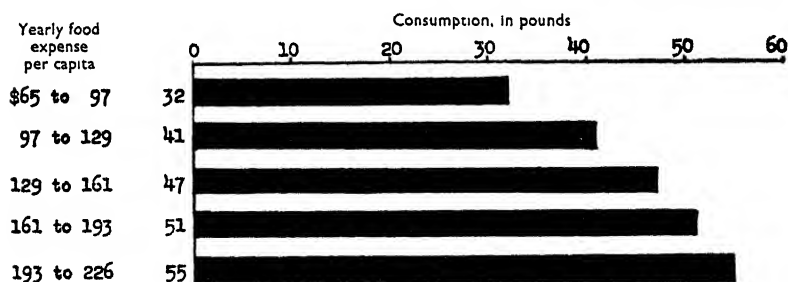
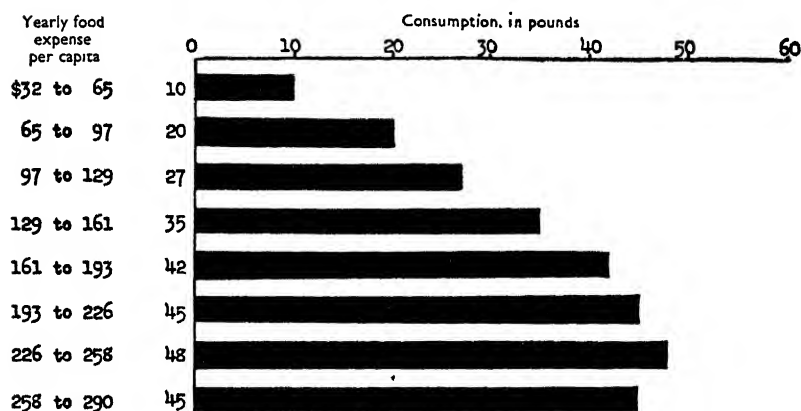
The abundance and variety of the American food supply is reflected

in diets at all levels of expenditure for food. The seven charts (Charts 3-9) indicate at different levels of expenditure for food about how much is consumed of each of several important types

CHART 4. CONSUMPTION OF EGGS

- (a) upper part, 1914-33, estimated yearly *per capita* consumption, non-farm families.¹
 (b) lower part, March-May, 1935, weekly *per capita* consumption by families of employed-wage-earners and salaried workers, multiplied by 52.

¹ Food expenses 1914-33 adjusted to March-May 1935 price level.



of food as shown by family dietary studies. The figures are from studies among urban and village families between 1914 and 1933, and from preliminary data based on spring records from a current study of diets of employed wage-earners. In the latter case the average weekly figures have been multiplied by 52 in order to make them of an order of magnitude to compare with the 1914-33 data. In so far as there are seasonal variations in consumption, as in the case of vegetables and fruits or eggs, this point should be kept in mind.

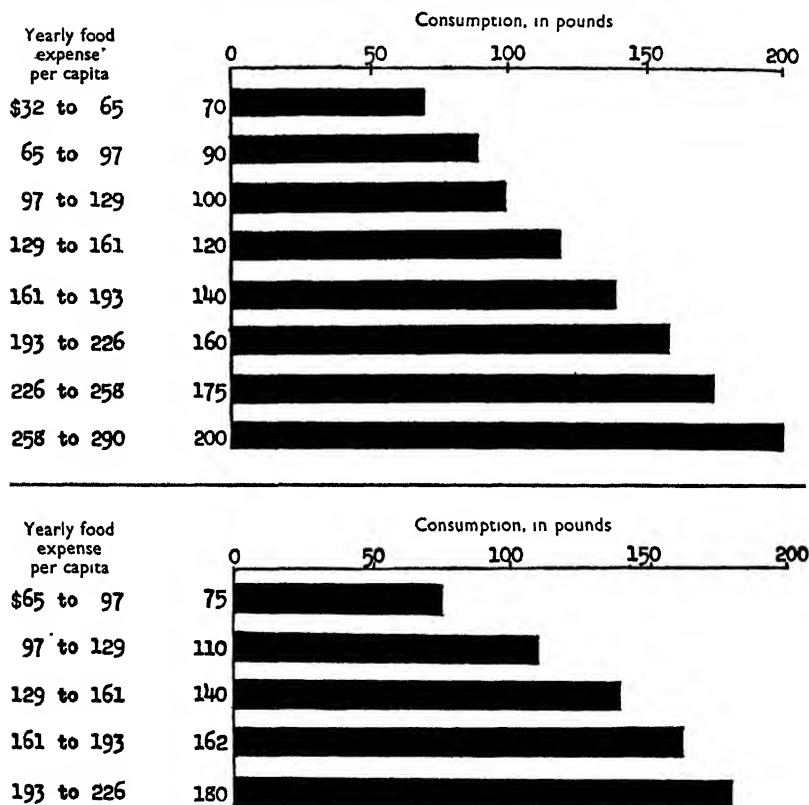
In all cases the averages refer to quantities available to the household for consumption rather than the quantities actually eaten.

Probably from one study to another the differences in averages for any food group would be less if the data referred to actual consumption rather than to available supplies. Families at the higher eco-

CHART 5. CONSUMPTION OF LEAN MEATS, POULTRY AND FISH

- (a) upper part, 1914-33, estimated yearly *per capita* consumption, non-farm families.¹
 (b) lower part, March-May 1935, weekly *per capita* consumption by families of employed wage-earners and salaried workers, multiplied by 52.

¹ Food expenses 1914-33 adjusted to March-May 1935 price level.



nomic levels tend to waste much more food than those at lower, but differences are great from family to family at every level.

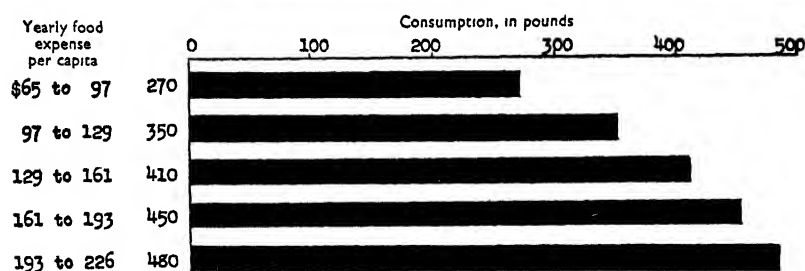
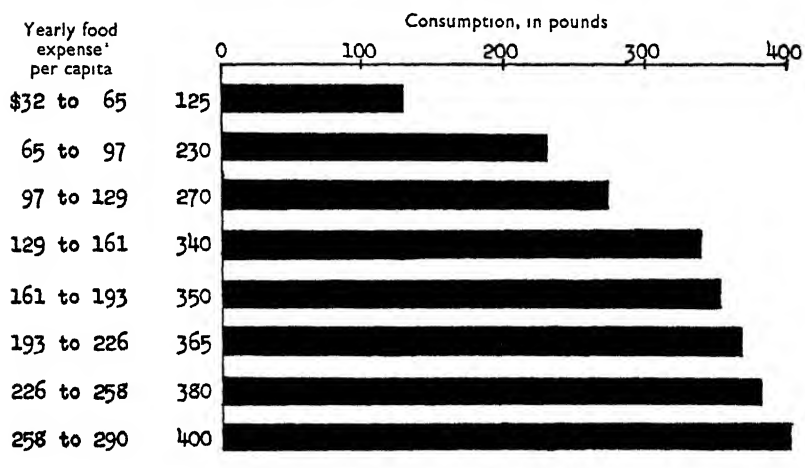
With increasing expenditure for food there is a marked increase in the total amount of food purchased. These increases are not evenly distributed from one group of commodities to another. They are especially noticeable in eggs, meats, milk, butter, and the succulent vegetables and fruits, and much less pronounced with respect to grain products, potatoes, dried legumes, and fats (other than butter).

The percentage of the grain products purchased in ready-to-eat form increases as there is more money for food. Also with increasing food expenditures, a higher percentage of the fats are in the form

CHART 6. CONSUMPTION OF MILK

- (a) upper part, 1914-33, estimated yearly *per capita* consumption, non-farm families.¹
 (b) lower part, March-May 1935, weekly *per capita* consumption by families of employed wage-earners and salaried workers, multiplied by 52.

¹ Food expenses 1914-33 adjusted to March-May 1935 price level.



of butter, and a higher percentage of the milk is in fresh fluid form rather than in canned form. The share of the succulent vegetables and fruits that have special nutritive values, as tomatoes, citrus fruits, leafy, green and yellow-coloured vegetables, varies from region to region and from season to season.

According to present knowledge, food must supply some thirty or more different nutrients, in order to provide the needed proteins of high quality, the essential minerals and vitamins, as well as the necessary energy-yielding food. Fortunately, many of these substances are so widely distributed in common foods that there is little

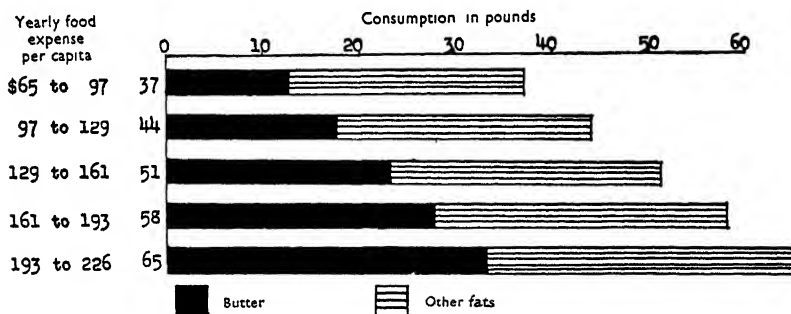
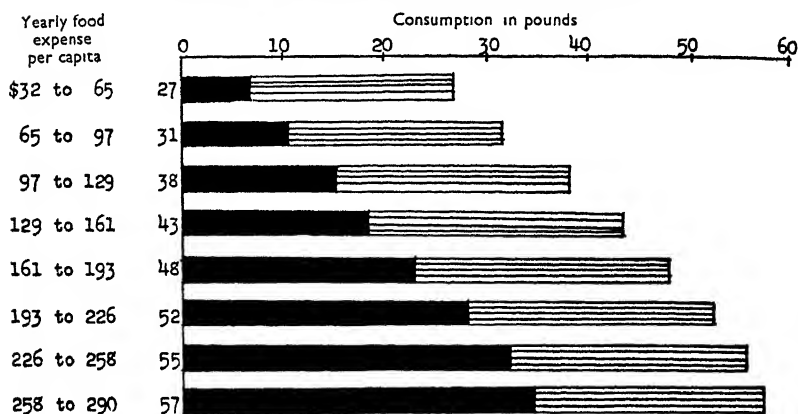
danger of shortage in freely chosen diets. But some are very unevenly distributed and unless care is taken in food selection will be meagrely supplied.

CHART 7. CONSUMPTION OF BUTTER AND OTHER FATS

(a) upper part, 1914-33, estimated yearly *per capita* consumption, non-farm families.¹

(b) lower part, March-May 1935, weekly *per capita* consumption by families of employed wage-earners and salaried workers, multiplied by 52.

¹ Food expenses 1914-33 adjusted to March-May 1935 price level



In so far as the necessary data are available, dietary analyses include estimates of the quantities of nutrients present in food which are significant in appraising quality in diet. In the studies here presented, the energy value of the diets and their content of protein, calcium, phosphorus, iron, and vitamins A, B, C, and G (flavin) have been computed. The figures on food composition used in the calculations have been compiled from several published sources and from unpublished data.

In the main, the available data on food composition refer to the

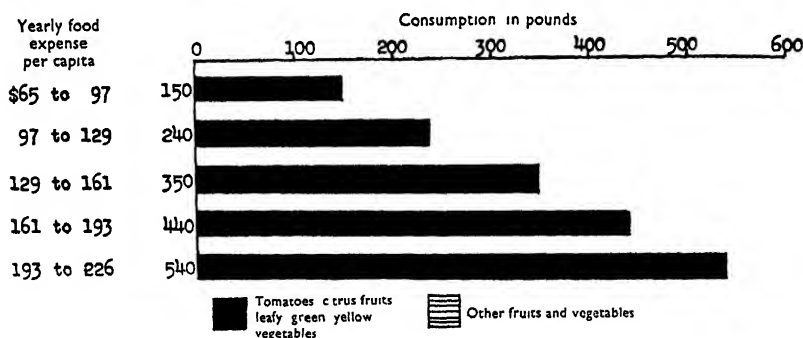
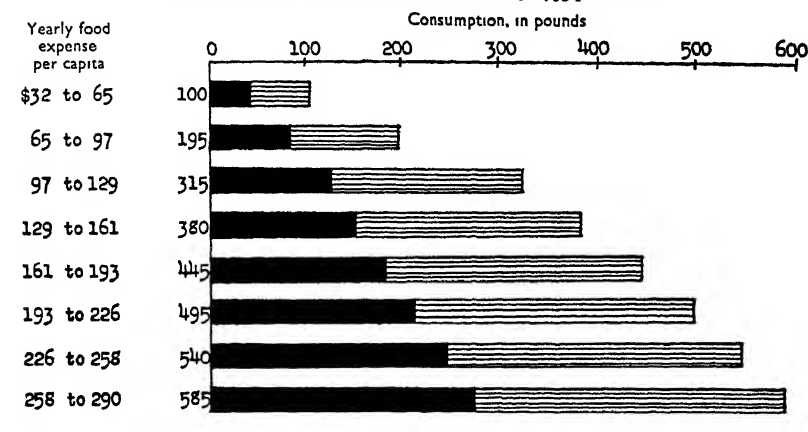
raw, untreated food materials. The nutritive content of foods, especially so far as the fat, mineral, and vitamin values are concerned, may be altered greatly by the treatment to which food is

CHART 8. CONSUMPTION OF FRUITS AND VEGETABLES (exclusive of potatoes and dried legumes)

(a) upper part, 1914-33, estimated yearly *per capita* consumption, non-farm families.¹

(b) lower part, March-May 1935, weekly *per capita* consumption by families of employed wage-earners and salaried workers, multiplied by 52.

¹ Food expenses 1914-33 adjusted to March-May 1935 price level.



subjected in preparation and service. This point should be kept in mind in interpreting the results of this study.

In general, the nutritive value of family diets increases as more money is spent for food. In large measure this is due to more plentiful food supply purchased. However, the more expensive diets are also somewhat richer in protein, minerals, and vitamins. The quality of the diets of the higher income groups depends on what is eaten and what is wasted, or the choice that is made in the abundance.

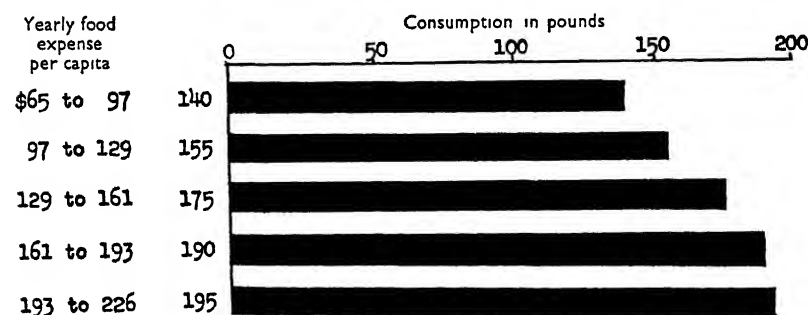
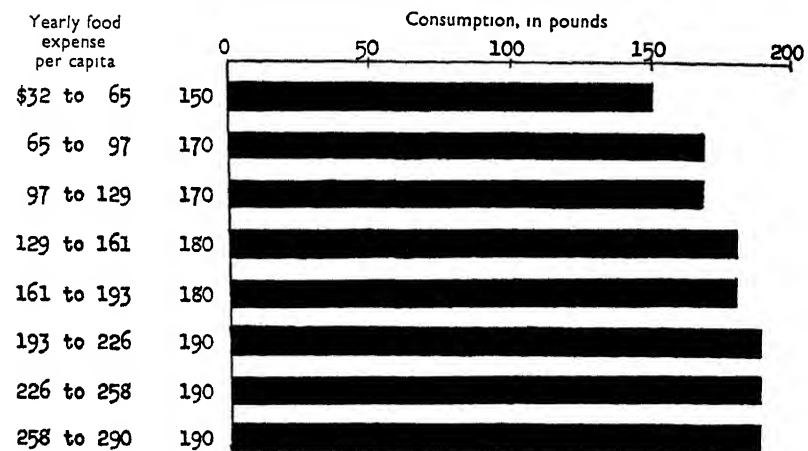
Calorie for calorie, the food supply of families spending the largest amounts for food are only slightly higher in proteins, minerals, and vitamins than diets of low-income groups. If, however, the milk,

CHART 9 CONSUMPTION OF GRAIN PRODUCTS

(a) upper part, 1914-33, estimated yearly *per capita* consumption, non-farm families ¹

(b) lower part, March-May 1935 weekly *per capita* consumption by families of employed wage-earners and salaried workers, multiplied by 52.

¹ Food expenses 1914-33 adjusted to March-May 1935 price level



vegetables, and fruits purchased are almost completely consumed, whereas considerable waste occurs in the fats, sugars, and grain products, the food actually eaten by the higher income groups may be considerably richer in minerals and vitamins than the diets of low-income groups.

Charts 10, 11, and 12 (pp. 455-7) present average figures on the chemical composition of diets consumed in spring and summer months. With increasing expenditures for food the protein content

and the potential energy value of the diets increase at about the same rate; hence the percentage of calories derived from protein is fairly constant. From 40 to 60 per cent. of the protein comes from animal sources.

The amount of fat increases more rapidly than the amount of carbohydrate. At the lower levels of expenditure it appears that protein foods are given preference over fatty foods, so far as can be judged by the rate of increase in consumption with increased expenditures for food.

Of the three mineral elements considered, calcium is the one in which low-cost diets are likely to be most deficient. It is in this element that the rate of increase in the content of the diet is most accelerated as the expenditures for food increase. But not until a level of food expenditure of \$97 to \$129 *per capita* per year (March-May 1935 retail food price level) is reached, is the average calcium content of the diet above probable minimum requirements for good health. The diets of most families spending less than \$65 per person per year are deficient with respect to all three minerals. The diets of many families spending less than \$100 *per capita* per year are inadequate with respect to one or more of these mineral elements.

Of the four vitamins considered, vitamin A is probably most abundantly supplied with reference to need and vitamin B the least. With increasing expenditure for food the rate of increase in the vitamin B content of the diets is the least accelerated of the four.

As yet much more is known about the kind of nutrients that should be included in the diet than about the exact amount required of each essential substance. This is particularly true since it is recognized that there are different planes of nutrition within the range commonly considered 'normal'. Diets that are good enough to keep families in average health may not be good enough to promote the best health, or to enable individuals to attain the best physical development of which they are capable. Much research will be needed before all of the nutritional requirements of human beings can be defined with a high degree of precision. It is instructive, however, to compare and appraise everyday diets with reference to some of the more significant factors for which some information is available regarding human requirements. As a working basis for this comparison suggested dietary allowances are shown in Table I.

The suggested energy allowances are set fairly close to probable average requirement because the consumption of a surplus of energy-yielding food results in the storage of fat, and an excess of body fat is burdensome. Of other dietary factors, a margin of safety over

TABLE I

Quantities of nutrients for individuals per day, used in evaluating dietary adequacy

Individuals by age, sex, and activity groups	Dietary allowance in					
	Energy value	Protein	Calcium	Phosphorus	Iron	Vitamin A Sherman units
Child under 4 years	Calories 1,200	Gm. 45	Gm. 1.00	Gm. 1.00	Gm. 0.006-0.009	Sherman units 120-300
Boy 4-6; girl 4-7 years	1,500	55	1.00	1.00	0.008-0.012	20-50
Boy 7-8; girl 8-10 years	2,100	65	1.00	1.00	0.011-0.015	20-50
Boy 9-10; girl 11-13 years	2,400	75	1.00	1.20	0.012-0.015	21-35
Moderately active woman; boy 11-12 years; girl over 13 years	2,500	75	1.00	1.20	0.013-0.015	24-60
Very active woman; active boy 13-15 years	3,000	75	0.88	1.32	0.015	25-65
Active boy over 15 years	3,000-4,000	75	0.88	1.32	0.015	30-75
Moderately active man	3,000	67	0.68	1.32	0.015	40-100
Very active man	4,500	67	0.68	1.32	0.015	30-75
Average, per capita, 1930 population	2,500-2,800	68	0.90	1.23	0.013-0.014	45-110
						560-760

Relative nutritive requirements—Bureau of Home Economics Scale

A 'nutrition unit' is taken to represent 3,000 calories, 70 gm. protein, 68 gm. calcium, 1.32 gm. phosphorus, 0.015 gm. iron, 4,000 units vitamin A, 750 units vitamin B, 30 to 75 units vitamin C, and 800 units vitamin G.

(All vitamin units are Sherman units.)

Individuals by age, sex, and activity groups	Dietary allowance in					
	Energy value	Protein	Calcium	Phosphorus	Iron	Vitamin A Sherman units
Child under 4 years	40	70	150	80	40	75
Boy 4-6; girl 4-7 years	50	80	150	80	50	75
Boy 7-8; girl 8-10 years	70	100	150	80	70	75
Boy 9-10; girl 11-13 years	80	110	150	90	80	90
Boy 11-12; girl 14-19 years	83	110	150	90	90	90
Boy 13-15 years	100	110	130	100	100	100
Boy 16-19 years	120	110	130	100	100	100
Woman 20-74 years	To be determined individually	100	130	100	100	100
Man 20-74 years		100	100	100	100	100
Over 75 years		100	100	100	100	100

CHART 10. PROXIMATE COMPOSITION AND ENERGY VALUE of diets of families of employed wage-earners and low-salaried workers, May-August 1935.
(30 industrial cities, 12 States, U.S.A.)

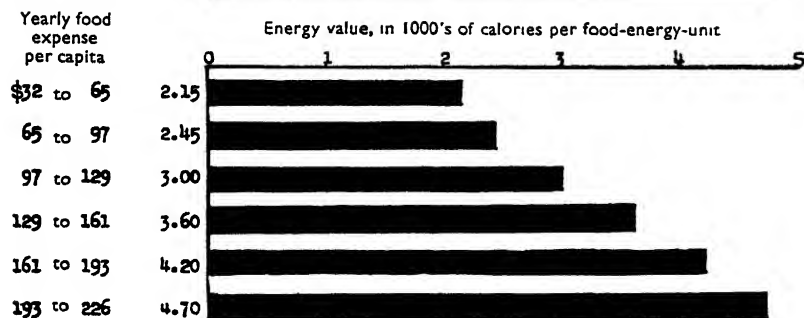
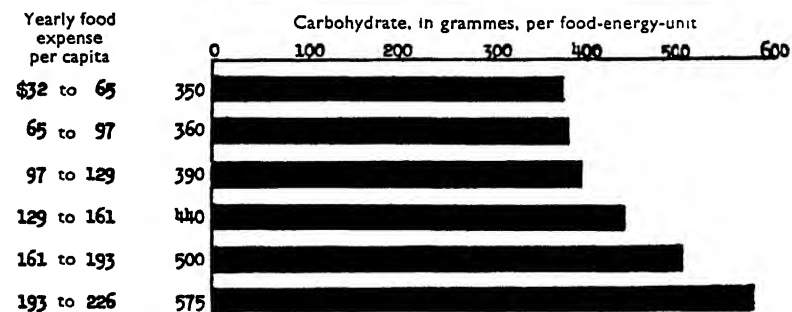
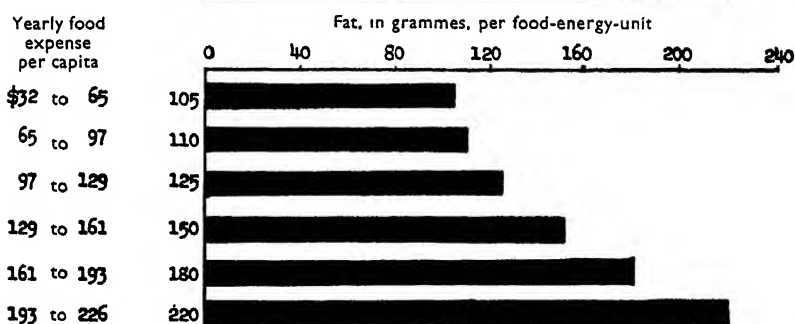
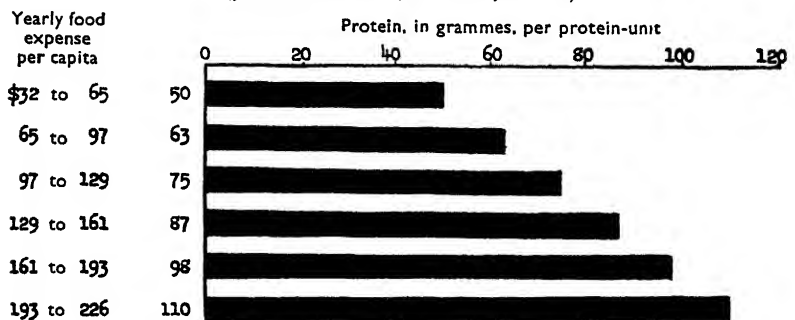


CHART II MINERAL CONTENT of diets of families of employed wage-earners and low-salaried workers May-August 1935
(30 industrial cities, 12 States, U S A)

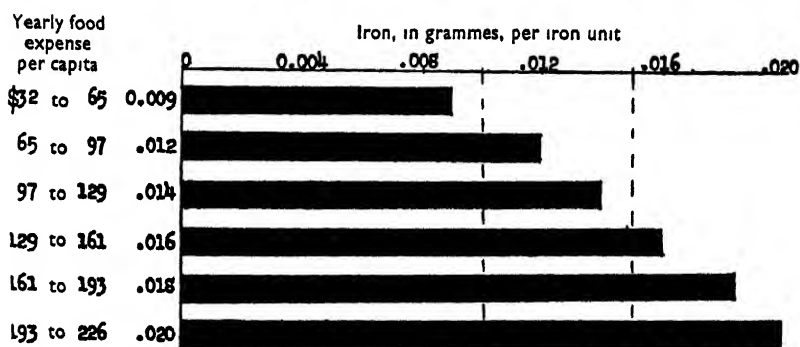
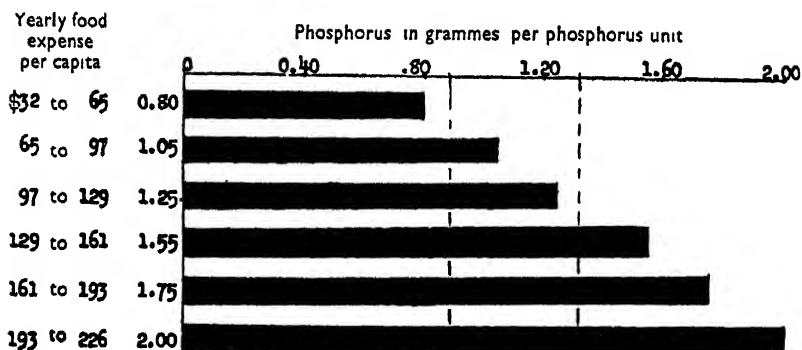
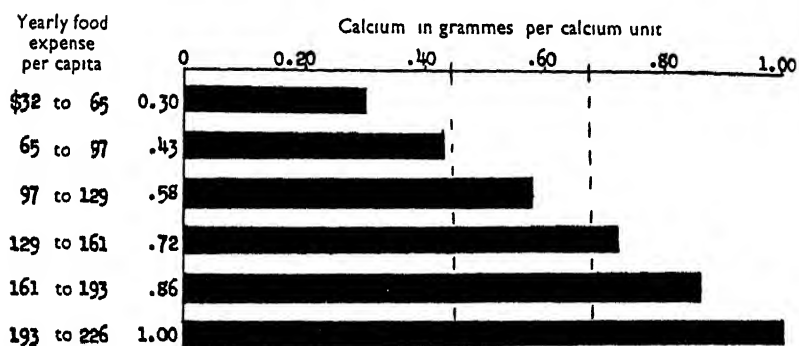
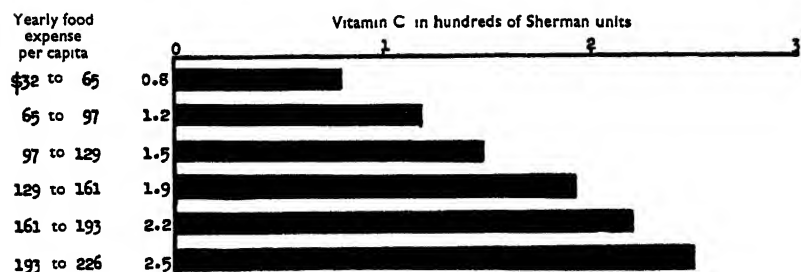
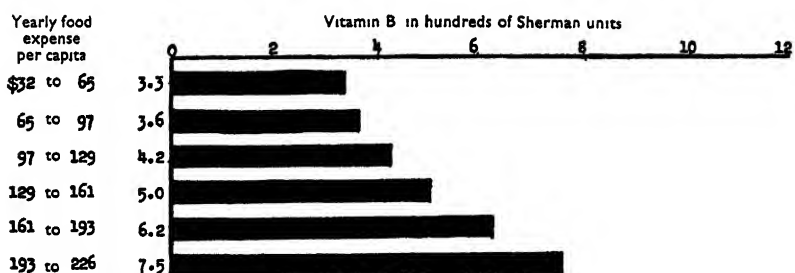
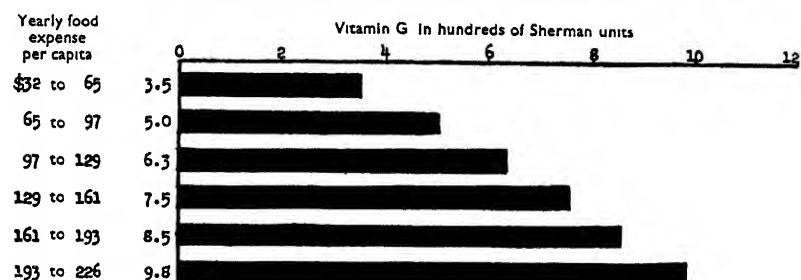
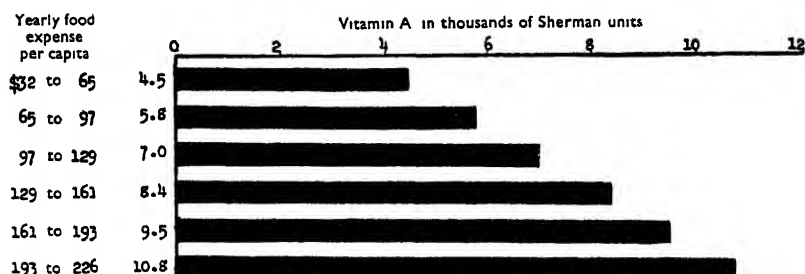


CHART 12 VITAMIN CONTENT of diets of families of employed wage-earners and low-salaried workers. May-August 1935
per nutrition unit per day
(30 industrial cities, 12 States, U S A)



probable average minimum requirement is indicated. How wide this margin should be for different nutrients is not yet known. But in determining the margin of safety which the diet might well carry, possible losses due to improper methods of preparation and to incomplete utilization by the body should be considered, as well as the variations in human requirement and in food composition.

For protein, calcium, phosphorus, and iron, the figures allow a margin of approximately 50 per cent. over average minimum requirements for maintenance. Present consumption habits give an even greater prominence than this to protein, and there is evidence that the consumption of twice as much calcium as is obviously needed for maintenance contributes to general well-being. A range is suggested for iron. The lower quantities probably are fully adequate if the iron in the food as eaten is present in available form.

A margin of 50 per cent. or more over minimum requirements is indicated for each of the several vitamins. In the case of vitamin C, the higher values are suggested for use in evaluating diets when the computations of nutritive value are based, in the main, on factors representing the composition of untreated raw products. The vitamin C content of foods in their fresh, natural state may be greatly lowered during storage and cooking. In the case of the other vitamins, the smaller quantities probably are sufficient to maintain an average state of health, while the larger quantities represent conservative estimates of what might be called good investments in better-than-average nutrition. These more generous allowances are entirely feasible for large groups of the population. They represent levels that can be afforded by many families if careful selection is made among available food supplies. It is possible that future research may show that for some constituents the margin of safety included in the figures of Table I are unnecessarily generous; on the other hand, still wider margins for others may later be found desirable.

While many people subsist on diets that fail to meet these nutritional levels, without suffering from hunger or a degree of ill health recognized as 'disease', it is desirable to set dietary standards high enough to maintain the fullest degree of health which a completely adequate diet would make possible.

Figures showing variations within the averages presented graphically for spring and summer months are not yet available. In a detailed study of winter diets of wage-earning families living in North Atlantic cities, it was found that all of the families spending at a level of \$193 to \$226 *per capita* per year obtained food supplies that met or exceeded the 'minimum' nutritional needs of the families.

Over 80 per cent. of those spending \$129 to \$161 *per capita* yearly were equally fortunate. But less than 25 per cent. of those who were spending between \$65 and \$97 *per capita* yearly had diets that met or exceeded 'minimum' requirements in every respect.

Of all nutrients, calcium and vitamin B appeared to be least abundantly furnished with respect to need; and protein, most abundantly.

Chart 13 (pages 460-1) shows for five different geographical regions consumption during the spring months of 1935 of families who were spending the same amount for food. This level of expenditure for food is well above the median for employed wage-earners. It represents families in the third quartile when they are arranged by level of expenditure for food. It is probable that more marked differences may appear when families who spend comparatively little for food are compared.

During the spring months, for families spending at a level of \$129 to \$161 *per capita* yearly for food, the differences in consumption of milk from region to region are less striking than one might expect to find. The east south-central region which is usually considered to fall short in milk consumption gives a report about as high as the average for other regions. Probably this can be explained by the fact that this comparison is made between comparatively well-to-do families in every region. The low consumption of milk, which is considered to be characteristic of the south, probably reflects the high percentage of low-income families living in that area. Their milk consumption is far below the average for the country as a whole.

There appear to be marked differences in the consumption of butter and other fats from one region to another. The consumption of total fats in the east south-central region is conspicuously high, whereas the consumption of butter tends to be low. The total consumption of butter and other fats is higher for the east south-central and Pacific regions than for others. This fact may be significant taken in connexion with the figures on lean meat, poultry, and fish. The two regions in which the consumption of fats is high show a lower than average consumption of lean meat, fish, and poultry. This fact has also been observed in other studies. Apparently either fat or meat is required to give a sense of satisfaction to the American consumer. Where the consumption of fat is very high, the consumption of lean meat often is lower than average.

The part of Chart 13 dealing with grain products suggests that families living in the east north-central region eat somewhat more than average, and families in the mountain region somewhat less than the average quantity of grain products. Whether this will be

CHART 13. REGIONAL DIFFERENCES IN FOOD CONSUMPTION of families of employed wage-earners and low-salaried workers spending \$129 to \$161 yearly *per capita* for food. March-May 1935.
(26 cities in 12 States in U.S.A.)

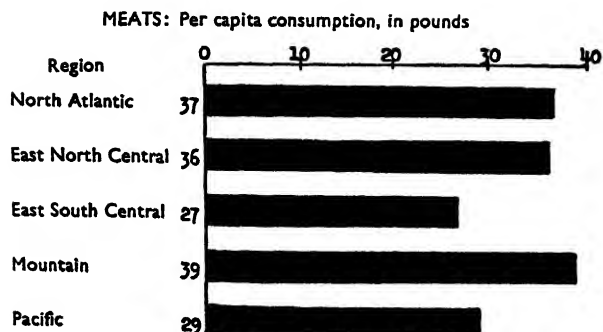
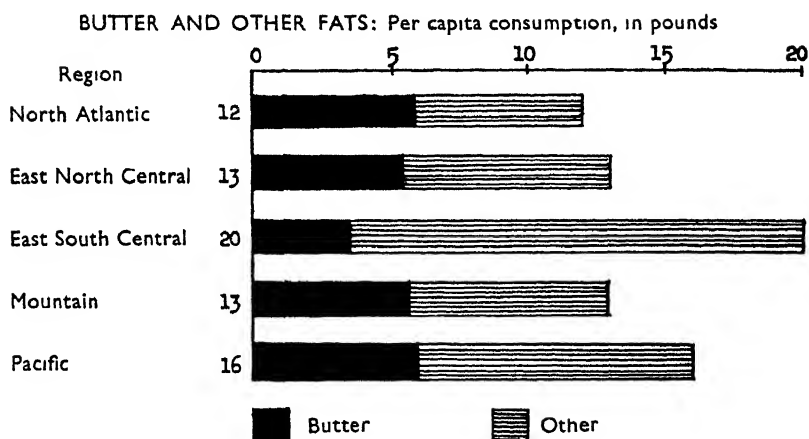
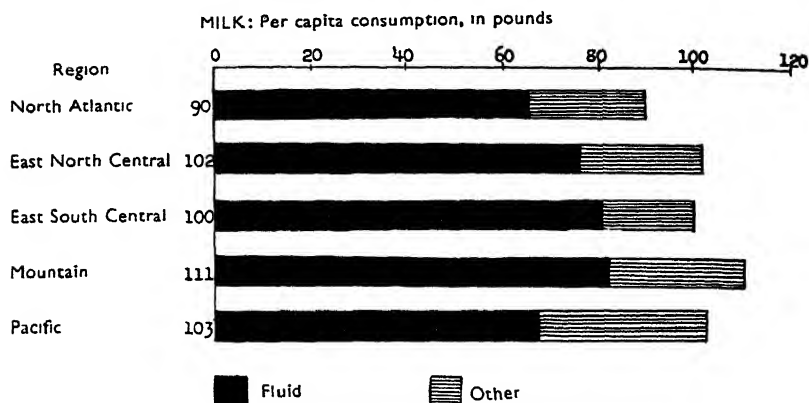
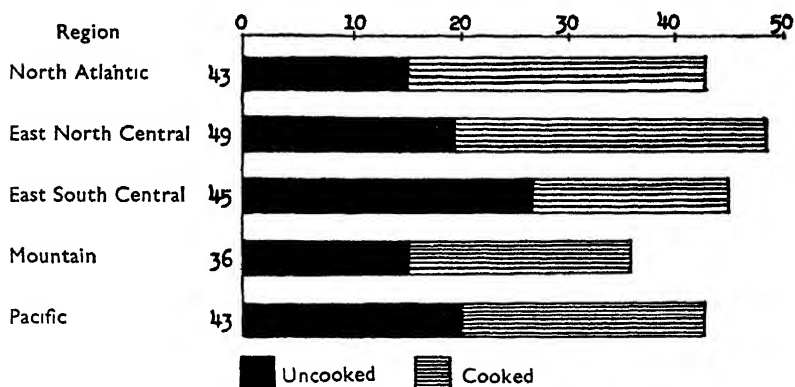
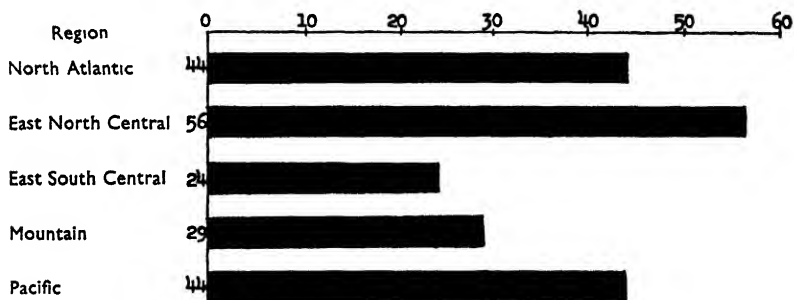


CHART 13. REGIONAL DIFFERENCES IN FOOD CONSUMPTION of families of employed wage-earners and low-salaried workers spending \$129 to \$161 yearly *per capita* for food. March-May 1935.
(26 cities in 12 States in U.S.A.)

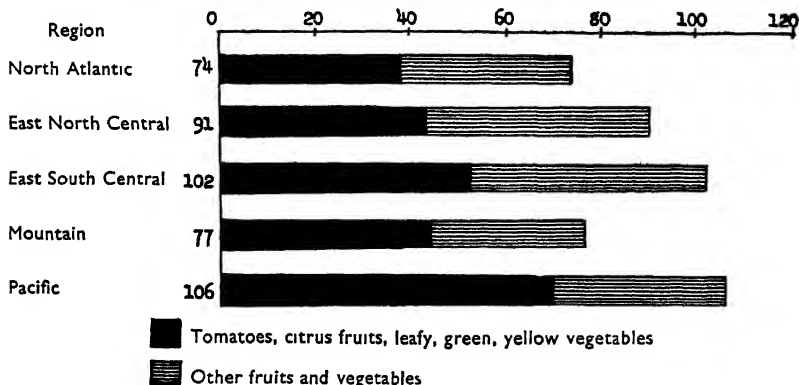
GRAIN PRODUCTS: Per capita consumption, in pounds



POTATOES, SWEET POTATOES: Per capita consumption, in pounds



FRUITS AND VEGETABLES¹: Per capita consumption, in pounds



¹ Exclusive of potatoes and dried legumes.

borne out as data become available referring to other economic levels or other seasons of the year remains to be seen. The percentage of the grain products purchased in uncooked form is conspicuously high in the east south-central region. This probably reflects the amount of wheat flour purchased for hot biscuits and the amount of corn meal and grits consumed.

In the spring months the consumption of vegetables and fruits appears to be lower in the North Atlantic and mountain regions than in the south and in the Pacific regions. This undoubtedly reflects differences in local supplies and prices. Vegetable and fruit production is high in the south and in California during these months; prices are lower than for the country as a whole. A high percentage of the vegetables and fruits consumed in the Pacific region belong to the group noted for special nutritive values, tomatoes, citrus fruits, leafy, green and yellow vegetables.

The consumption of potatoes and sweet potatoes varies greatly from region to region during the spring months. It is high in the north and low in the south. This situation is probably tied up with the fact that sweet potatoes, which form a large share of the total potato consumption (i.e. potatoes and sweet potatoes) in the south, are not in season during March, April, and May; whereas the supply of white potatoes, used chiefly in the north, is still fairly abundant and prices are low.

The last chart (Chart 14) shows the percentage of the urban and village families, studied between 1914 and 1933, whose expenditures for food fell at each of the ten levels indicated, together with a comparable distribution of employed wage-earners and low-salaried clerical workers studied in 1935-6. Only one-sixth of the families in the latter group were in the three lower levels of expenditure for food, whereas one-fourth of the group studied earlier were.

Families spending at these three lower levels are very likely to have diets deficient in one or more nutritive factors. Almost 30 per cent. of the families of both groups fell in the fourth group. The diets of these families tend to be on the borderline of 'minimum' requirements.

About half of the families fell in the six highest groups. These families were spending enough for food to obtain adequate diets, if reasonable care were taken in the selection and preparation of food. It should be remembered, however, that 'minimum' requirements are probably far below optimum.

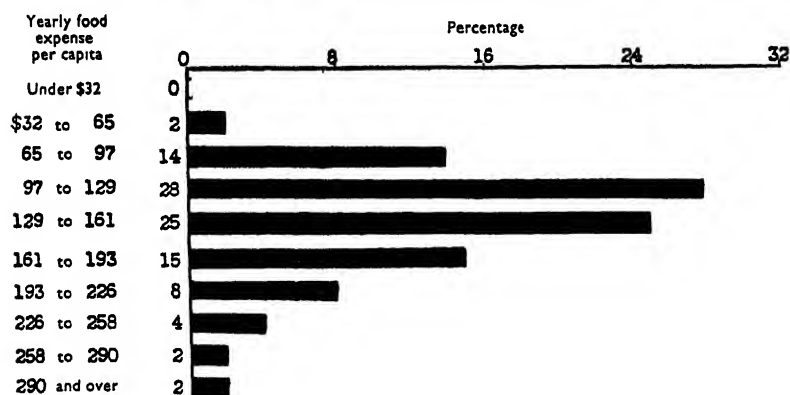
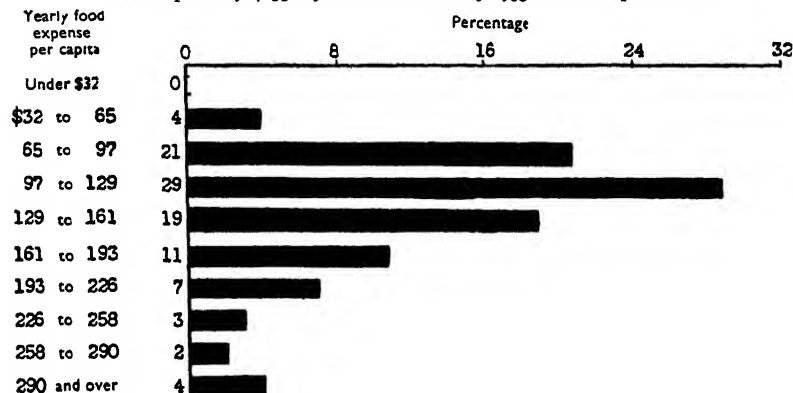
The quartile of the non-farm population spending the most for food consumes about one-third of the milk, fruits, vegetables

(other than potatoes and dried legumes), meat, fish, and eggs, whereas the quartile spending the least for food consumes about one-sixth of those products. How much the urban demand for

CHART 14. DISTRIBUTION OF FAMILIES BY LEVEL OF EXPENSE FOR FOOD

- (a) upper part, 1914-33, non-farm families supplying records (1,020 families in cities and villages of 44 States and the District of Columbia).¹
 (b) lower part, 1935-6, families of employed wage-earners and low-salaried workers supplying records (2,746 families in 32 industrial cities in 13 States). Preliminary figures.

¹ Food expense 1914-33 adjusted to March-May 1935 retail food price level.



different products would be increased if the level of expenditure for food were increased, or if the food prices to consumers were reduced, is a question of considerable interest. If the entire non-farm population were really adequately fed without deviating more than necessary from current consumption habits, there would be need for greatly increased supplies of food, particularly of fruits, vegetables, butter, milk, eggs, and possibly meats.

The statements on food habits of urban families in this report are based on all data available at the moment. It is recognized that these are rather fragmentary. The analysis of diets of employed wage-earners is still in progress. When completed, our knowledge of American dietary habits will be greatly extended. Also, a study of consumer purchases, now under way as a Federal Works Project (co-operatively undertaken by the Bureau of Home Economics, Bureau of Labor Statistics, National Resources Committee, and Works Progress Administration) will furnish more authoritative figures, both on differences in the food consumption habits of different socio-economic groups spending the same amounts for food, and on the share of the native white families of different types spending at different levels for food. We look forward to a broader base for evaluating the adequacy of diets of the population of the United States.

GRAF FINCK VON FINKENSTEIN, *Valais, Switzerland.*

Much of the discussion of the consumption of agricultural products has dealt with the influences on agricultural depression, but I should like to point out that it has also a relation to the means of combating cyclical depressions.

An investigation of the development of production in German agriculture over the period of the last 130 years has shown—apart from the presence of cyclical phases, i.e. of alternating periods of expansion and depression in agriculture as a whole and in its various branches—a long-phase basic movement, with a starting-point, a culmination, and a depression. This process is a structural process of development, which is caused by changes in the internal structure of agriculture, whereas cyclical changes are due to external influences.

Around this structural basic trend with a phase of more than a century, the cyclical changes swing as secondary phenomena with a phase of 9 to 12 years and with annual fluctuations. Cycles have therefore a lesser significance in the growth and course of the present depression than is generally assumed.

Further, a comparison between the course of the long-phase trend of market prices and that of the development of production proves that the development of market prices for agricultural products apparently stands in no causal relationship to the dynamics of the development of production. Nevertheless, there are connexions, indeed, very close connexions between prices and production in agriculture, if the investigation is not based on market prices but

on the receipts of the farmer per 100 kg. of his market production. For the ruling factor to the farmer is not the price development in certain categories of the market, but solely the total receipts which he obtains for his annual production. This sales volume is, however, very different in composition, amount, and quality. Composition, amount, and quality are determined by the structure, and thus structural influences take effect in the field of the markets, prices, and cycles.

In the course of the 130 years investigated, agriculture has passed through two severe structural crises. The development from the rigid forms of the three-field system to the intensive and individualistic systems of alternating cropping was in Germany the fundamental alteration of structure in the nineteenth century. Since the beginning of the twentieth century our agriculture has been once again involved in a severe structural crisis. The causes cannot be efficiently combated by the usual methods of cyclical stimulation or support of prices. This structural crisis can only be overcome by structural evolution.

M. K. BENNETT,¹ *Food Research Institute, Stanford University, California.*

Professors Forrester and Cathcart, whose admirable papers we heard this morning, devoted their attention principally to broad problems of consumption of food in general. I propose to consider only wheat. My purpose is to survey historical developments in world utilization of wheat during the past fifteen years, concluding with the prospective trend over the next decade.

'Utilization' of wheat means 'physical disappearance' taken annually by crop years. Wheat physically disappears as grist for the mills, as seed, and as feed for live stock and poultry in the form of grain either whole or chopped, but not milled. The sum of disappearance in these three categories would represent wheat utilization.

Very few countries, unfortunately, publish statistics designed to measure utilization in these categories. Instead, they supply us with statistics of domestic production, of imports and exports, and—sometimes—of stocks carried from one year to the next. With accurate statistics of this sort, one can measure total utilization of wheat indirectly, but not the separate categories of food use, feed use, and seed use. It is, nevertheless, important to distinguish between the several types of use.

For several years I have been trying to arrive at reasonably reliable

¹ The special title of Dr. Bennett's address was 'Trends in World Wheat Consumption'.

estimates of annual food use, feed use, and seed use in each of 40 countries. These 40 countries constitute the 'world' in the terminology here used. Twenty-five countries lie in Europe west of Russia; 2 in North America; 3 in South America; 5 in Africa; 5 in Asia and Australasia. A statistical problem of some magnitude and interest has had to be faced. But the statistical problem does not lend itself to brief discussion. For those who are interested in the methods used, I would refer to the issue of *Wheat Studies*, copies of which I have circulated.¹

The picture of world wheat utilization which emerges is one of rather steep increase from 1921-2 to about 1931-2, followed by a sharp break, and then by approximate stability in the past four crop years. Little, if any, more wheat was used in 1935-6 than in 1928-9, in spite of growth of population over the interval. The level in 1935-6 was roughly 4 per cent. below the peak, but was still about 10 per cent. above the level of 1921-2, a decade and a half earlier.

In two principal respects this post-War course of world wheat utilization was peculiar, judged in relation to pre-War trends extending from 1885 to 1914. First, the increase in the decade following 1921-2 was exceptionally rapid. Second, the flattening, even decline, of the course of world wheat utilization during the five years just past represents a phenomenon without precedent in the three decades preceding the War.

The influences which have caused world wheat utilization during the past fifteen years first to rise with exceptional rapidity, then to stabilize or even decline, are of course numerous and difficult to appraise. Difficulties arise because the world is made up of countries differing widely in living standards, trade status, and food preferences and habits. But in general the factors that seem to govern the course of world wheat utilization may be classified as either accidental, episodic, cyclical, or trend influences.

These are familiar statistical terms, but I use them with rather specialized meanings. By accidental influences I mean such events as a yield per acre of wheat exceptionally low in an area too poor to bring in imports to supplement the short domestic crop, or a yield per acre of some other cereal so small as to lead to exceptionally small price differentials between it and wheat. By episodic influences I mean specifically the rebuilding of agriculture especially in eastern Europe from the chaos existing after the War. By cyclical influences I mean the shorter-term rise and fall of national real income that coincides broadly with swings of general price levels, trade, indus-

¹ *Wheat Studies*, vol. xii, no. 10, June 1936, Stanford University, California.

trial production, and employment. By trend influences I mean persistent slow-moving forces—population growth, gradual long-term rise in national standards of living, and slow spread of knowledge.

This list of influences does not explicitly include change in price relationships between wheat and other foodstuffs. Implicitly, however, such changes are included, especially under the head of accidental influences. I doubt if changes in price relationships are of dominant importance in explaining the long and moderately long-term drifts in world wheat utilization. These longer drifts, especially when expressed in terms of *per capita* food use of wheat, seem to respond fundamentally to change in standards of living, conceived as the flow of goods and services into consumption. This seems to dominate the long-term changes in *per capita* wheat utilization; but accidental and episodic influences may be significant over shorter periods. Established food preferences, perhaps traceable to biological or climatic circumstances, place limits upon the effects which can be exerted by change in standard of living.

To illustrate: There is, I believe, a 'normal course' of *per capita* food use of wheat over a long period of time. If a nation enjoys a persistently rising standard of living, starting from moderate poverty, and if in that nation wheat is the strongly preferred cereal food, then with passage of time wheat will practically displace all other cereals in the diet, and *per capita* food use of wheat will, for a period, persistently rise. But at length a 'saturation point' is reached. This usually appears, I believe, when the level of *per capita* food use of wheat lies between $5\frac{1}{2}$ and 8 bushels. Thereafter, with continuing rise of living standards, *per capita* use of wheat tends for a time to fall. The mechanism is that *per capita* intake of all foods measured in calories falls with urbanization and less arduous work; the total cereal intake, which now represents intake of wheat, falls more than the total intake of food calories; and *per capita* intake of non-cereal foods rises, especially the intake of the so-called protective foods. Ultimately the *per capita* food use of wheat in such a country might fall as low as 2 bushels annually, a level that has probably been reached in some high-income groups.

Such a 'normal course' of *per capita* food use of wheat, involving gradual rise to a maximum level of about 8 bushels, followed by gradual decline to perhaps as little as 2 bushels and stabilization there, could not be expected to appear everywhere. It would not be the course in areas where wheat was not the strongly preferred cereal food. I suggest that rye perhaps stands roughly as high as wheat in

the esteem of some populations of central and eastern Europe; and that rice stands higher than wheat in the esteem of some populations of Asia. If so, the saturation point of *per capita* food use of wheat would be reached at a much lower level amongst such populations than in areas where wheat was the strongly preferred cereal.

This line of reasoning helps to explain why the levels of *per capita* food use of wheat to-day vary so widely from country to country—at the extremes, from less than half a bushel in Chosen to over 7 bushels in France. It helps also to explain why, as between countries where general standards of living are more or less the same, the *per capita* food use of wheat may differ considerably in amount; here the degree of preference for wheat may be important. It aids in the explanation of trends in wheat utilization. Needless to say, a good many puzzles remain unsolved. Too little seems to be known about present differences in national standards of living and historical changes in them, and about degrees of preference for wheat among the cereal foods.

Leaning on these somewhat nebulous theories, I interpret the course of world wheat utilization since 1921-2 as follows. Accidental influences largely determined the timing of the peak about 1931-2; this came because feed use of wheat was greatly enlarged through exceptionally short yields of maize in the United States. Barring this accident, and other things equal, the peak of world wheat utilization would probably have come in 1928-9. The sharp progressive increase of world wheat utilization up to 1928-9 rested in very large part upon episodic recovery of agriculture in central and eastern Europe. But it also reflected progressive enlargement of feed use of wheat in Britain, the Netherlands, Belgium, and Scandinavia, and upon rise in standards of living in a long list of countries. This enlargement of feed use of wheat seems to have concealed tendencies for *per capita* food use of wheat to decline in several countries where relatively high standards of living prevailed. Such countries had entered the phase of the normal course of *per capita* food use of wheat in which decline is characteristic.

The subsequent course of world wheat utilization presents greater difficulties of interpretation. After 1928-9, if we disregard the accidental effects which gave rise to a bulge in 1930-1 and 1931-2, there was no increase whatever. This flattening occurred in spite of influences which tended to maintain the level, notably population growth and substantial diversion of wheat to feed uses in north-western Europe and North America. Thus total world food use of wheat tended to decline rather persistently after 1928-9. The decline

of *per capita* world food use of wheat was, of course, even larger in percentage terms. This fall in *per capita* food use of wheat has perhaps tended to be explained, by those who were aware of it, mainly as an effect of economic depression and of government policies.

I suggest that it is easy to attach undue weight to the adverse influences both of depression and of government policies. Evidence and reasoning suggest that such influences were relatively unimportant in a rather long list of countries, including the British Isles, Australia, Canada, New Zealand, the United States, France, Belgium, Switzerland, the Netherlands, Denmark, Sweden, Norway, Spain, Portugal, Japan, and India. Of another group of countries I cannot form an opinion. These are Greece, Chile, Uruguay, Chosen, and South Africa. Adverse effects of depression and government policy on *per capita* wheat consumption, however, seem clearly in evidence in central and eastern Europe, including Germany; in Italy; and in Egypt, Tunis, Algeria, and Morocco. Even in some of these, decline of *per capita* wheat consumption, or slackening in its rate of increase, seems explicable by reference to the possibility that the saturation point was reached during the past seven years. In still others of this group, the fall in *per capita* wheat consumption was partly an accidental effect following low wheat yields in countries unable to import. In any event, there was no reason to expect as rapid a rise of *per capita* wheat consumption after 1928-9 as had occurred before in eastern Europe, because episodic recovery had spent its force. Thus the adverse effects of government policies and depression upon *per capita* wheat consumption seem to me easily susceptible of exaggeration. I am not now speaking of their much larger adverse effect upon world distribution of wheat acreage, or wheat prices, or on international trade in wheat.

There is no purpose in exploring the prospective trend of world wheat utilization over the next decade except under stated assumptions. But what assumptions shall be made concerning prospects for war, currency stabilization, trade barriers, price movements, and the trade cycle? Developments in these fields will surely affect the course of world wheat utilization much more in some areas than others. What is probable, what improbable, lies beyond my grasp. But for purposes of exposition, I shall take the optimistic view and assume that the next decade will be peaceful and will, on the whole, witness an upward turn of world trade and shrinkage of the huge superstructure of government control.

Such developments would favour increase of *per capita* wheat

consumption in many countries, especially central and eastern Europe, Italy, and northern Africa. But the principal point I wish to make is that total world utilization of wheat cannot be expected to increase spectacularly even in a broadly favourable economic environment. Only a small increase can be expected in seed use and feed use together—say 4 or 5 million bushels per year. These uses now constitute about 20 per cent. of total use. The other 80 per cent.—food use of wheat—is likely to be affected by influences working in opposite directions. Increase of population will tend to enlarge food use, though further slackening in the rate of population growth seems probable. Increase of *per capita* food use of wheat is likely to occur in some countries, under my stated assumptions. But more countries, with larger aggregate population, seem to stand either in the phase of declining *per capita* food use of wheat, or close to the saturation point, which is followed by the declining phase. The history of the past fifty years is, I believe, that one country after another has joined the group wherein decline of *per capita* wheat consumption is characteristic. The process is probably continuing. It is possible that at present countries in this phase outweigh the shrinking list of countries wherein *per capita* wheat consumption continues to increase. In short, the saturation point and the declining phase of *per capita* wheat consumption may be present, or nearer, over a larger fraction of the world population than we have been inclined to suppose.

I shall not attempt to translate these ideas into precise quantitative terms. The next decade, however, cannot witness an increase of world wheat utilization as large as that which occurred in the seven or eight years preceding 1928-9, when the increment of trend was close to 50 millions a year. There will be no episodic recovery to prompt a rise in the next decade, and there will be slower growth of population and wider incidence of normal decline in the *per capita* use of wheat as living standards rise. I doubt if the annual increment of trend in total wheat utilization can equal the increment of the three decades preceding the War, which was 40 million bushels. In my opinion an annual trend increase of 30 million bushels is quite the largest that can reasonably be expected for the next decade, even with a favourable economic environment.

This means that the world is probably geared to produce, on the present acreage with normal yields per acre, more wheat than will be necessary to fill normal requirements, at least in the first few years of the next decade. A new world wheat surplus might appear. My view of the immediate future is thus even a little more gloomy than

that of Mr. Cairns, as I understand him to have expressed it last Wednesday, for his assumptions about general revival of trade and relaxation of government controls were more pessimistic than mine. With respect to the more remote future, we perhaps differ. I should expect the world wheat situation to adjust itself within a decade even to normal decline of world wheat utilization, provided that governments could begin soon to turn away from their manifold controls of economic life. Wheat acreage might then redistribute itself geographically and even contract in total without unbearable repercussions on producers. There is now no quick cure of the sickness in the world wheat situation except the accident of weather. There is, in my opinion, not even a long-term cure if the medicine continues what it has been in type if not in specific ingredients. This medicine undermines the patient's vitality, increases his obesity, and causes a new sore to appear as soon as an old one has disappeared. But the patient might eventually regain his health if he could be left alone in a favourable climate.

S. SCHMIDT,¹ *University of Cracow, Poland.*

During the second Conference of Agricultural Economists in Ithaca, N.Y., I presented a paper entitled 'The Agricultural Depression in East Europe with Special Reference to Poland',² where I called attention to the fact that Poland, more densely populated than the other agricultural countries of our continent, could easily make use of all the products sold abroad. Yet we are selling them because we cannot afford to consume them.

As to the future development, I expected in 1930 that the pressure of Polish agricultural exports would show an increasing tendency. This would come about, as I was convinced, even at the expense of further lowering of our standard of living. 'Debts'—I said—'will have to be paid off. Tax requirements must be met in some way. Finally, industrial articles will also have to be imported, unless, of course, foreign capital comes in and helps to develop our own industries.'

Was I right in making the above statement? I shall start this small contribution to to-day's discussion of consumption problems with a brief examination of this question.

First of all, it must be recalled that—while rye and potatoes are the principal crops grown in Poland and hogs her main animal pro-

¹ The special title of this address was 'Consumption Problems and Purchasing Power (Social Income) in Poland'.

² *Proceedings of the Second International Conference of Agricultural Economists, 1930.*

duct—small grains, sugar, bacon, butter, eggs, and lumber form the characteristic features of agriculture's share in Polish foreign trade. The latter is comparatively very high, and the export quota of agricultural goods—some smaller items included—reach up to 50-60 per cent. of the external trade. Let us, however, leave lumber aside

TABLE I. *Index Numbers of the Volume of Exports***Agricultural Products*

(Three-year moving averages)

1927-1929 = 100

	1928-30	1929-31	1930-2	1931-3	1932-4	1933-5
Wheat†. . .	1,561	2,769	4,407	4,023	4,792	4,869
Rye . . .	284	432	355	346	501	596
Wheat and Rye . .	308	475	430	414	581	675
Barley . . .	160	168	140	120	156	195
Sugar . . .	117	107	72	46	34	32
Butter . . .	116	117	74	45	21	36
Eggs . . .	94	90	80	63	47	39

	1927	1928	1929	1930	1931	1932	1933	1934	1935
Pork volume .	74	121	105	99	94	77	54	41	38
Pork value‡. .	100	123	140	143	120	84	77	67	60

* Calculated from official publications of Główny Urząd Statystyczny, Warszawa.

† Up to 1927 Poland was a net importer of wheat.

‡ Corrected for the purchasing power of money.

and confine ourselves to small grains, sugar, bacon, butter, and eggs. It is upon them that the situation of agriculture in the greater part of the country depends. Especially important here are bacon, butter, and eggs, which can be taken as indicators of the prosperity of the peasant farmer.

Table I represents the growth and decline of the volume of the most characteristic export goods. The respective index numbers were calculated by use of a three-year average, with 1927-9 as their base. Three-year moving averages were used—with a few exceptions—as the method most suitable for making comparisons with production. The latter is, of course, dependent on weather conditions and may change sharply from one year to another so that it can hardly be measured unless the annual fluctuations have first been removed.

These figures are so striking that they hardly need any comment. Special stress should be laid on the increase in the items, rye and wheat. I do not share the very widespread opinion that they were

accomplished mainly by means of bounties. The system of bounties—though obviously very expensive—could not under prevailing conditions have exercised an influence on the volume of exports to such an extent as was thought of and which it was blamed for.

TABLE II. *Total Production of the Principal Crops**

(Three-year moving averages)

In million quintals

	1927-9	1928-30	1929-31	1930-2	1931-3	1932-4	1933-5
Wheat . . .	16.8	18.8	20.9	19.5	19.2	18.6	21.2
Rye . . .	63.3	66.9	65.5	62.5	62.9	65.4	67.1
Barley . . .	14.9	15.5	15.3	14.4	14.4	14.3	14.5
Oats . . .	25.2	25.9	25.3	23.5	24.6	25.4	26.1
Potatoes . .	287.2	301.0	312.1	306.2	297.6	305.9	314.3
Sugar-beets .	44.9	48.6	41.5	32.8	23.3	22.6	23.0

* Calculated from official publications of Główny Urząd Statystyczny, Warszawa.

Exports of small grains are undoubtedly those in which the pressure to sell regardless of price could primarily manifest itself during the years of depression.

There was no similar movement in the export of live-stock products, and this, at any rate, is due to the failure of objective pressure in selling at cut prices. As a matter of fact no room was left for our exports of those goods in international trade owing to the restrictions put by importing countries in whose markets we used to sell our live-stock products. The shrinkage in the sugar exported, on the contrary, was accompanied by the immensely declining production, which at the time of prosperity was boosted by dumping.

When we look at the production figures we are struck at once by a remarkable increase in crops during the years 1927-30. High yields obtained in these years were a result of the previous adoption of intensive methods of farming, which at the time had risen to a kind of agricultural creed. As a natural consequence of the decline in prices, extensification of agriculture was inevitably to follow.

The years of depression also caused some shifts among crops cultivated. Sugar-beets and barley were reduced. Rye and potatoes, on the contrary, which are predominant crops and form the backbone of a self-contained peasant farming, considerably increased in area. The total yields of the six principal crops show the result of the shifts in area and changes in output per acre (Table II).

It would be incomparably more difficult to give a similar estimate of animal production. For butter and eggs rough guesses only are

available. For meat and particularly for pork one may rely on more or less correct figures of slaughterings (Table III).

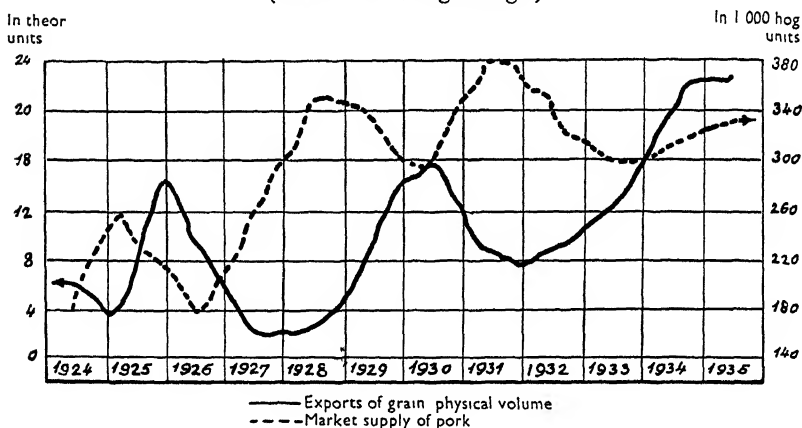
While the production of beef remained almost stationary there was a steady growth of pork supply interrupted only by regular

TABLE III. *Production of Meat*

(According to slaughterings in thousand tons*)

	1927	1928	1929	1930	1931	1932	1933	1934	1935
Beef .	167.9	..	183.0	174.2	180.9	205.9	194.4	158.6	165.8
Pork .	398.17	459.13	418.96	410.66	485.06	431.49	391.51	439.11	462.74

* Exports of live hogs included.

CHART I. SUPPLY OF PORK AND EXPORTS OF GRAIN, POLAND, 1924-35
(12 months moving averages)

cyclical fluctuations (Chart 1). This trend also finds its reflection in the yearly censuses of animals (Table IV). They clearly show that the growth of hog population was accounted for by the slow but constant rate at which the purchasing power of hogs in Poland, judged by the index of agricultural products, was advancing in favour of hogs.

The domestic market, upon which the agricultural production of Poland depends, is rather narrow. The present structure of the population is not of a kind to create a strong market, three-quarters of the occupied persons being engaged in farming.

The migration from the towns, which started after the War, was checked by the last depression. The stronger rate at which city population rose for some time has been reversed in favour of rural population which has begun to advance again. Rates of natural

increase, indices of real growth of city and rural population, and total population figures are given in Table V, for the years 1927 to 1935 respectively.

TABLE IV. *Live-stock Censuses**

(In numbers, 000 omitted)

	<i>Cattle</i>	<i>Hogs</i>
1927	8,601	6,333
1928 . . . .	..	..
1929	9,057	4,829
1930	9,399	6,047
1931	9,786	7,321
1932	9,461	5,844
1933	8,985	5,753
1934	9,253	7,089
1935	9,760	6,723

* Calculated from official publications of Główny Urząd Statystyczny, Warszawa.

TABLE V. *Population*

	<i>Rate of natural increase per 1,000 inhabitants</i>	<i>Indices of real growth 1929 = 100</i>			<i>Total population in millions</i>
		<i>Poland</i>	<i>Cities*</i>	<i>Country*</i>	
1927 . . .	14.3	97.4	98.0	97.2	30.3
1928 . . .	15.9	98.7	98.9	98.6	30.7
1929 . . .	15.3	100.0	100.0	100.0	31.1
1930 . . .	17.0	101.3	100.9	101.4	31.5
1931 . . .	14.7	102.6	102.0	102.8	31.9
1932 . . .	13.8	104.2	103.0	104.6	32.4
1933 . . .	12.3	105.5	104.0	106.0	32.8
1934 . . .	12.1	106.7	105.0	107.4	33.2
1935 . . .	12.1	108.3	106.1	108.8	33.6

* Estimates.

Making allowance for the growth of population we can calculate quotas of production per head. These indicate that all agricultural products increased in the years 1927 to 1930 ahead of population growth, but gains remained constant in pork only. Crops lost their gains very soon. For sugar, with the greatest drop, barley and oats, the loss was never regained; potatoes are coming back to high figures; and rye and wheat are now keeping almost in step with the growth of population (Table VI).

Production figured out per head cannot, of course, be taken as the amount available for domestic use. Exports must be subtracted in order to get approximate amounts of what, *ceteris paribus*, might be consumed within the country. Thus we get residuals of production per head.

Differences in residuals are, taken in absolute figures, rather small. In order to examine them I have constructed a special index in which the proportion of exports to residuals in the three-year average

TABLE VI. *Production of Population per head*

(Three-year moving averages in kg.)

	<i>Wheat</i>	<i>Rye</i>	<i>Barley</i>	<i>Oats</i>	<i>Potatoes</i>
1927-9 . .	55	206	48	81	926
1928-30 . .	60	214	50	83	957
1929-31 . .	67	209	49	79	979
1930-2 . .	61	197	45	72	952
1931-3 . .	60	195	45	74	914
1932-4 . .	57	201	44	77	925
1933-5 . .	64	203	44	78	939

	<i>Beef</i>	<i>Pork</i>
1927 . . .	5.5	13.1
1928 . . .	..	15.0
1929 . . .	5.9	13.5
1930 . . .	5.5	13.0
1931 . . .	5.7	15.2
1932 . . .	6.4	13.3
1933 . . .	5.9	11.9
1934 . . .	4.8	13.2
1935 . . .	4.9	13.8

1927-9 is taken as a basis. On this base, index numbers of the following averages (three-year moving averages) are calculated (Table VII).

An investigation of the residual indices conceived in such a way reveals an interesting picture. It shows that the proportion of exports to residuals increases strikingly for some products. This is particularly true of wheat in spite of the very low production per head. Even a slightly increased production *per capita* was over-compensated by exports rising at a still higher rate. Resulting from this we get steadily decreasing residuals of wheat available for domestic use.

The decline of wheat residuals is very significant and, I think, manifests itself in the indices of residuals. It may be taken as an indicator of the influence which the great depression exercised upon our standard of living. Further on, on more exact figures, we shall see the development of wheat-bread consumption in the cities. Taking this into account makes me convinced that the trend in wheat residuals should be primarily attributed to the catastrophic impoverishment of the peasant farmer. Furthermore, the consumption of wheat by the rural population grows almost to a prohibitive resistance and, as such, should account for increasing exports.

A similar but a far less marked movement in residuals can be traced as far as rye is concerned, while the indices of barley residuals seem to change least.

Residuals of oats—which are not exported—are equal to the

TABLE VII. *Residuals of Production*

(Three-year moving averages)

1927-9 = 100

	1927-9	1928-30	1929-31	1930-2	1931-3	1932-4	1933-5
Wheat							
R. per head in q.*	0.55	0.60	0.65	0.60	0.58	0.55	0.62
Indices†	100	1,410	2,292	4,041	3,750	4,701	4,250
Rye							
R. per head in q.	2.04	2.09	1.98	1.88	1.87	1.89	1.90
Indices	100	276	441	382	373	538	635
Wheat and Rye							
R. per head in q.	2.59	2.69	2.63	2.48	2.45	2.44	2.52
Indices	100	292	460	442	432	607	689
Barley							
R. per head in q.	0.45	0.44	0.42	0.40	0.40	0.38	0.37
Indices	100	165	180	161	158	188	238
Sugar							
R. per head in q.	0.12	0.12	0.13	0.13	0.08	0.08	0.07
Indices	100	117	100	65	7	5	5

	1927	1928	1929	1930	1931	1932	1933	1934	1935
Pork									
R. per head in kg.	10.9	11.3	10.3	10.1	12.5	11.1	10.4	12.9	12.7
Indices	73	116	110	106	81	75	56	37	32

* Residuals per head in quintals.

† Indices of ratio: exports to residuals per head.

production per head, which is steadily decreasing. On the contrary, potatoes, which also are not exported, are, after a sharp drop, rising again in available supply. The self-contained small peasant and his shift from bread to potato consumption is responsible for this rise. Depression times are in wealthy industrial countries characterized by increasing bread consumption. In the same circumstances in Poland, shifts from bread to potatoes constitute the characteristic feature.

There is no other product which could be compared with sugar. Sugar production shrunk per head, which was due to the impossibility of maintaining exports by dumping at any price. But at the same time domestic consumption was handicapped by the very high processing tax still in force. Thus the rapid rate at which, according

to indices, the proportion of exports to residuals is dropping does not help in any way to lift consumption. The latter falls too.

A similar but comparatively moderate decline in exports of pork was accompanied by somewhat rising residuals available for domestic use. Together with higher production the room for consumption was growing.

Residuals of beef are represented by production figures per head (as above), beef exports being relatively insignificant.

Residuals of production per head are, as it was pointed out, equal to quantities available for domestic use. In the case of small grains and potatoes, however, they do not reflect the net average human consumption. The latter is undergoing wider fluctuations which are under the influence of the demand for feeding animals, hogs particularly.

There is in Poland a growing competition for crops between men and animals, in which the hog cycle plays a special role. Hogs are the main source of cash income for the small peasant; they are his last refuge. Hence, the increasing hog population causes, by the continuous waves of the cycle, important changes in quantities used for feed. They are not confined only to barley and potatoes—the main hog foodstuffs. They affect as well rye, used extensively in substitution for barley, and wheat by causing occasional shifts in human diet.

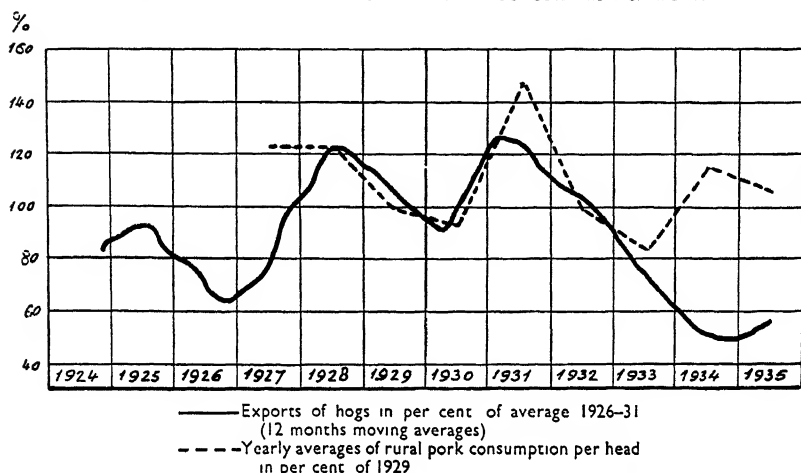
This is the reason why we witness the flow of hog and small grain exports replacing each other and showing clearly the interdependence existing between both, as illustrated by Chart 1.

We find another correlation between the changes in residuals and net consumption, which seems to be very symptomatic. Growing residuals of pork supply have not the same effect upon consumption in the bigger cities as in the remaining part of the country. The latter, being to a high degree influenced by the demand of the rural population, undergoes fluctuations corresponding to the hog cycle. A high supply of hogs together with comparatively low exports means always an increase in the pork ration of the country population. Indices of rural pork consumption were rising distinctly in 1928 and 1931, the years of cyclical up-swings in supply. The rise was greater in 1931, due to increased production, while the volume of exports remained stationary. The next rise, 1934–5, corresponded again to the supply growing and was accompanied by a very low level of exports (Table VIII, and Charts 1 and 2).

The development of consumption in cities represented by the capital city and some bigger towns shows a somewhat different picture. The pork ration is not affected by the growing supply of

hogs; it rather changes along the lines of the increasing purchasing power of the consumer's money and business activity. Hence, in 1931, in a year of very severe depression, increased purchasing power

CHART 2. EXPORTS OF HOGS AND RURAL CONSUMPTION OF PORK

TABLE VIII. *Indices of Pork Consumption (per head)*

1929 = 100

	1927	1928	1929	1930	1931	1932	1933	1934	1935
Consumption as a whole	105	109	100	98	121	108	101	117	123
Capital city and some bigger towns	89	98	100	100	97	115	118	118	141
The remaining country	123	122	100	96	147	100	83	116	106

of złoty brought about steadily increasing consumption. The latter was marked in 1934-5 by improving business. This makes it possible for an increased share of residuals from the last up-swing in supply being sold on the domestic market, thus weakening the influence of lower exports.

What has already been said shows the value and importance of what we call social income and its distribution in the amount and character of the products consumed. So far dependence of consumption on social income has been discussed indirectly. Now in the concluding part of my paper I shall proceed to a direct attack on this problem.

Estimates of aggregate money income and real income for Poland in 1929 and 1933 were made by M. Kalecki and L. Landau.¹ Accord-

¹ L. Landau i M. Kalecki, *Dochód społeczny w roku 1929*, Wydawnictwo Instytutu spraw społecznych, Warszawa 1935, and L. Landau i M. Kalecki, *Szacunek dochodu społecznego na rok 1933 i.t.d.*, Wydawnictwo Instytutu spraw społecznych, Warszawa, 1935, and *Mały Rocznik Statystyczny*, Warszawa, 1936.

ing to them the aggregate money incomes in 1929 and 1933 were 28.3 and 15.5 milliard złoty, respectively, which was equal to 910 złoty (equal to £21) per head in 1929.

Corresponding records for Britain calculated by Bowley and Stamp, and recently revised by Pigou and Clark,¹ show a money income per head in 1929 of £85.5. It hardly need be repeated, I think, that making direct comparisons between British and Polish social incomes on terms of their absolute height is somewhat precarious. Even if the methods used for calculating estimates of social income did not differ from one another, we should be careful in using comparisons for drawing bold conclusions.

But what, I find, may be compared are the trends in development as presented by indices of social income per head, provided that there is no great difference in methods of construction. As far as methods used by British and Polish authorities are concerned attention must be called to the fact that Landau and Kalecki do not subtract costs of public administration. On the other hand, they differ from the British scholars in including a large volume of unpaid services performed by peasants on their own farms. These services are not very important in Britain, but the neglect of them in Poland would leave a huge part of the social income derived from agriculture out of any consideration.

Instead of making original remarks on these figures I confine myself to citing a passing statement by such an authority as G. Cassel. 'Poland', he says, 'deflated her currency most energetically and thus succeeded in maintaining its gold par, but only at the cost of reducing her industrial production to the lowest relative level of any country for which an index of production is published.'²

More telling in the developments of our standard of living are the changes in the aggregate purchasing power for consumption goods. Landau and Kalecki³ compute the latter by subtracting from the aggregate social income items of income used for investments and those of public administration costs. Their records show aggregate consumption power in 1929 and 1933 respectively: 23.5 milliard złoty (or figured out per head 741 złoty, equal to £17.1) and 12.9 milliard złoty. Further investigation shows, however, that distribution of the aggregate income in Poland is out of proportion to the number of population engaged in agriculture and in the remaining industries.

Taking the figures of social income for 1929 as a basis we get,

¹ A. C. Pigou and C. Clark, *The Economic Position of Great Britain*, Mem. No. 60, Royal Economic Society, June 1936.

² G. Cassel, *The Downfall of the Gold-Standard*, Oxford, 1936, p. 115.

³ Op. cit.

for Britain and Poland, index numbers of real income per head (Table IX). Agriculture has a comparatively small share in the aggregate consumption power, and thus indices based like those in Table IX upon total figures may be misleading. Taking account of this, Landau and Kalecki divide the aggregate purchasing power into that of the cities and that of the country population.

TABLE IX. *Index Numbers of Real Income per head in Britain and Poland*

	<i>Britain</i>	<i>Poland</i>
1929 . . .	100	100
1930 . . .	..	95
1931 . . .	..	86
1932 . . .	94	79
1933 . . .	.	76
1934 . . .	104	77
1935 . . .	109	..

Considering the purchasing power of the country population by itself, distinction must be made between the large share of unpaid services and the much smaller one for which money payments are made. The estimate of the first share is rather precarious. Several errors are apt to be implied in its origin. As retail prices of food are used in order to make figures comparable with the corresponding items of city consumption, it may easily be subject to over-estimation.

Let us now look at the figures arrived at. The aggregate rural purchasing power for consumption goods in 1929 amounted to 10.3 milliard złoty—8.2 milliard złoty of unpaid services and only 2.1 milliard złoty of money payments. The corresponding figures computed per head show 456 złoty (equal to £10 10s.); 363 złoty (equal to £8 7s.), and 93 złoty (equal to £2 3s.).

What strikes one about these figures is that the ratio of unpaid services is very high, the share of money payments being less than 20 per cent. Moreover, it seems apparent from the figures that the daily menu of the rural population can hardly contain foods bought outside. The peasant farmer on the average cannot afford to consume oranges, and he rarely even takes beef or sugar. In spite of this his ration may be entirely satisfactory from the physiological point of view. But it consists mostly of potatoes and cereals (rye mainly) which furnish 37 and 49 per cent., whereas milk and lard supply together about 14 per cent. of the calories.

Shifts in the diet from cereals (rye bread) towards potatoes have been observed in recent years, owing to the fact that cereals are a

more marketable product than potatoes, and the latter furnish a unit of calories at much lower prices (Table X).

TABLE X. *Prices paid for 1,000 Calories in Some Foods*

Year 1935

	Price in grosz	Price-indices. 1,000 calories in potatoes = 100
Potatoes . . .	9.2	100
Rye bread . . .	14.2	154
Sugar . . .	29.9	325
Lard . . .	16.4	178
Pork . . .	28.1	305
Milk . . .	36.1	392
Butter . . .	40.0	435
Beef . . .	102.2	1,111

Shifts in the diet are also closely related to the changes which occur in the money-payments share of the rural income. Calculations of the latter per head result in the following indices (Table XI):

TABLE XI. *Index Numbers of Real Income of Rural Population, 1927-35*

(1929 = 100)

1927 . . .	103	1932 . . .	52
1928 . . .	97	1933 . . .	44
1929 . . .	100	1934 . . .	40
1930 . . .	85	1935 . . .	46
1931 . . .	71		

Cutting the interest on the farmers' debts and converting them into long-term credit are in my opinion mostly responsible for the rise that occurred in 1935. Fortunately enough the purchasing power of towns—though subject to jealousy on the part of the country population—has developed along different lines. It was reckoned for the year 1929 at 1,547 złoty, equal to £35 12s., per head (aggregate figure amounting to 13.2 milliard złoty). This makes it possible to maintain in the cities a standard of living which, though far from being abundant, may be considered as quite satisfactory.

The higher standard of living of the city population is reflected in a rough comparison of the average ration of a manual worker employed in industry. The latter shows the respective shares of calories supplied by potatoes and cereals to be equal to 20 and 45 per cent. respectively, whereas milk, beef, pork, and sugar furnish together some 35 per cent., proportions which differ considerably from those of the country population.

Wheat bread, sugar, and meat, which are only occasionally consumed by the peasant, together with milk, may be taken as representative for fluctuations in city consumption. They reveal a picture shown in Table XII.

TABLE XII. *Indices of Consumption (Sugar, Wheat Bread, Milk, and Beef)*

	<i>Sugar*</i> 1928 = 100	<i>Wheat Bread</i> (Cities only) 1928 = 100	<i>Milk</i> (Upper Silesian Industrial District) 1930 = 100	<i>Beef</i> (Capital City only) 1927-9 = 100
1927	92.2	94	..	86
1928	100	100	..	105
1929	103.5	101.2	..	109
1930	99.4	108.5	100	105
1931	92.3	98.5	90	79
1932	86.8	93.9	79	83
1933	83.9	88.0	69	77
1934	88.7	91.6	75	85
1935	..	..	82	178

* L. Landau and M. Kalecki, *Szacunek dochadu*, 1933.

The respective indices prove that the rise in consumption since 1933-4 is related to the real purchasing power of the cities per head. This purchasing power, after a depression, seems slowly to improve again. Its corresponding indices with the year 1929 taken as a basis clearly point out that the drop has been checked (Table XIII):

TABLE XIII. *Index Numbers of Purchasing Power per head of City Population, 1927-35*

(1929 = 100)

1927	.	.	.	90	1932	.	.	.	86
1928	.	.	.	98	1933	.	.	.	84
1929	.	.	.	100	1934	.	.	.	85
1930	.	.	.	99	1935	.	.	.	85
1931	.	.	.	93					

It is to be expected that a further improvement in business will push the figures to a still higher level, and that, with this, the migration from the country to the cities, stopped for some time by the depression, will be taken up again. That will contribute towards the broadening of the domestic market which, in view of the present difficulties which international trade is facing, seems to be for Poland an unavoidable necessity.

THE EVOLUTION OF THE AMERICAN FAMILY FARM

ANDREW BOSS

University of Minnesota, Minnesota, U.S.A.

AMERICA was settled by people who were hungry for land. The nobility and the Church of Europe and of Britain, the mother countries, possessed the greater part of the limited land resources in those countries, making it difficult for the working classes to gain the use of land except as tenant farmers or as peasants on small subsistence tracts. That fact, however, did not prevent them from envisaging the advantages of landownership and sensing the feeling of independence and security that go with it. About the beginning of the nineteenth century tales began to creep back to them about the great land resources of the new country that could be had for the taking, or at most for a very nominal price. These tales stirred the imagination, spurred the ambitions, and stimulated many families to risk the dangers of crossing the Atlantic even though it involved six weeks of discomfort and risk on a sailing vessel instead of six days in safety and comfort on a palatial steamer as now.

If I may be pardoned for it, I should like to introduce an incident from my family history to illustrate the point. My grandfather Boss was a small contractor and builder living at Kinross, Scotland, getting his work from the country-side as work could be secured. My father, when seventeen years of age, had migrated to New York State where an uncle had established a business. I have at home a copy of a letter written to him by my grandfather in 1857, in which he recounts the small returns for his work, the difficulty of getting contracts, the impossibility of getting land at any reasonable price, and inquiring about prospects for getting land for himself and his other sons, should he come to America. I never saw the answer, but grandfather Boss later came to America, settling on a farm near Janesville, Wisconsin. My father established his home on a family farm in south-eastern Minnesota, while one of his brothers settled on a farm in Iowa and another on a California fruit ranch. History will recount thousands of similar family migrations in the quest for the privilege of setting up a farm with the expectation of gaining economic and social independence.

The farms established by these early immigrants were clearly of

the subsistence type. There was no thought of providing beyond the needs of the family for food, shelter, and clothing, or at least beyond the needs of the community, which in most instances was small and compact. There were no roads to market then and very few to the sea which offered the only outlet for surplus goods. To fill the cellars and store-rooms, to cure and dry meats, to tan hides into leather, to grow wool and linen for clothing materials, composed the budget of the farm family, though it was not dignified by the name 'budget' in those days. The more ambitious plantations and estates developed in the Virginias and Carolinas were nevertheless looked upon as family enterprises and set up for the support solely of the southern family and the surrounding, and to them necessary, slave labour.

Such was the picture of American agriculture for something over two centuries in which the family farm tradition became deeply embedded. New England land was rugged, stony, and covered for the most part with timber which had to be cleared away. The south-land also presented many obstacles to rapid development of farms. The spade and the hoe, the brush harrow, the sickle and the flail, composed the list of common farm implements during much of the period. Hand labour was supplemented to some extent by the ox and the horse, but man power then was the most important asset to the successful family farm. The farm was the centre of family interest and welfare. Trade and commerce were of little concern to those on the land, and they were from 90 to 95 per cent. of the population.

The family farm has always dominated American agriculture. The modern farm of the Corn Belt, or of the Wheat or Cotton Belt, is quite a different institution from the family farm of early New England agriculture, but it is still a family farm. And it is even more dominant in determining the national income (and I might add in unbalancing the national budget because of agricultural subsidies).

Exploring parties began to break through the Allegheny Mountains to the west soon after the close of the Revolutionary War, thus bringing into view still greater quantities of land of better quality and more easily subdued. Labour to clear and operate farms was scarce, however, and progress was slow. There was a limit to the amount of land that could be prepared for crops by the farm family, and quite as strict a limit to the amount that could be harvested, even when supplemented by hired or slave labour. The sickle and the cradle were still the common implements for cutting the grain. Migration westward followed the opening of the so-called North-West Territory in 1785. A liberal land policy on the part of the

national government stimulated the movement and aided in the rapid settlement of the prairie regions which offered great quantities of first-class agricultural land.

Shortage of man labour stimulated an interest in machinery. The invention of the cotton gin in 1793 and the development of the cotton industry changed radically the types of farming in the south. Slavery was greatly extended to provide labour for the cotton fields. Cotton and tobacco, both export products, became the leading crops of the south. This change in the agriculture of the south also influenced farm life in the New England States. Because of convenient and abundant water power and the ability of the northern whites to operate machines better, cotton spinning and weaving mills were erected along the north sea-coast where water transportation could be secured. These mills bid strongly for labour and took not only sons but daughters of farmers for work in the mills. Thus began the shift from the family farm as a major interest in New England to the great manufacturing enterprises which make this a most noteworthy commercial centre of the present day.

Quite as important in the evolution of the family farm has been the invention of farm machinery. The reaper, invented and perfected in 1831-4, relieved greatly the drudgery of the harvest field and at the same time permitted the operation of much larger acreages. The manufacture about 1840 of steel mouldboard ploughs for turning the soil and the power-driven thresher in 1850 greatly influenced the agriculture of the northern and west central States where soil and climate were especially adapted to maize and other cereal crops. Greater use of horses and steam power, larger acreages, more machinery marked the forward march of the American farm. More capital investment, an increasing load of debt, interest and taxes trail its progress. More of its products found their way to market and across the seas, but it still held the interest and labour of the family; it was still a family farm, though the influence of commerce and trade was beginning to be felt by the middle of the nineteenth century.

The Federal Government has consistently encouraged land settlement and ownership as a measure for developing national wealth and security. The Pre-emption Act of 1841 and the Homestead Act of 1862 were so framed as to make it easy to gain possession of the land, with the proviso of course that it should then bear a Federal tax in support of the Government. The amount of land to be secured under these Acts was suited to what was thought to be necessary to support a farm family in comfort and plenty. The traditional

American farm is one of 160 acres. That is the amount provided for in the Acts before-mentioned. Many hold to the opinion that it is a sufficient amount. A more accurate view perhaps is that until the turn of the twentieth century it was as much as the average farm family could operate to advantage. At the same time, if well located in a favourable climate, it would support the family well. That the welfare of the family unit was the focal point of governmental interest is indicated by the fact that the acreage permitted has been varied from time to time as new areas have been opened up. The Homestead Act, under which the larger part of the Mississippi valley and the Great Plains area were settled, was supplemented by the Tree Claim Act granting an additional 160 acres on the treeless prairies on condition that an area of at least ten acres be planted to trees and cultivated to insure their growth. On the dry lands of the Plains States as much as 640 acres were permitted, and in the Ranch States the amount was doubled, permitting both husband and wife to enter claims. While the amount of land that could be taken has thus been varied from time to time and from place to place, the government objective always has been to encourage the family to take sufficient land to provide ample support and income.

The close of the Civil War in 1865 found the United States Treasury badly depleted. The returning soldiers were induced to take land scrip in payment for their service to the country. The scrip was exchanged for land, usually an acreage of homestead size. Thus was the financial situation met, the soldiers provided with employment, and the traditional family farm fostered. Thus was the stage set also for a period of over-production of cereal crops and a post-war period of hard times for farmers that was not overcome until the break of the present century.

The family farms of this period, however, were not of the true self-sufficiency type of the earlier periods. The invention and improvement of machinery had gone on at a rapid pace. The self-rake reaper of 1850 became the self-binding harvester by 1880, displacing four or five men in the harvest fields. Some of these were the sons of farmers who went to the factories to make more machines. The daughters, too, went to care for the sons or to be clerks or workers in the factories and offices. The invasion of business upon the family unit became significant. The steel walking plough was replaced by the gang plough with one man doing the work of two. The steam-engine replaced horse power for driving the threshing machines, thus enlarging again the capacity of the man unit in converting products from the soil into articles of commerce and directing them

into commercial channels. Labour which had always been a limiting factor could, when supplemented by machines, operate more land which up to the twentieth century had been a cheap surplus commodity. The self-sufficiency farm of the earlier period was no longer a satisfactory unit, particularly in the north central States where treeless prairie land could be quickly converted into first-class wheat and corn land. Competition from these new and larger farms was not without effect on the farms of New England and the eastern States. Unable to meet the competition of the western prairie States in the production of agricultural products, factories were built for their conversion into finer goods, thus further developing the manufacturing industries and stimulating the commercial phases of agriculture.

It was during this period that enterprising capitalists sought to build fortunes out of land exploitation. Prairie lands ready for the plough could be purchased at extremely low prices. Bonanza farms in the Dakotas and western Minnesota were organized especially for the production of wheat. These were operated by hired managers and fully equipped with modern machinery. These flourished for a short time, but eventually gave way to the less spectacular family farms, largely because the family was willing to forgo a high standard of living in the endeavour to acquire land. In other words, they were willing to work temporarily at least for less than the hired labourer's wages.

Competition for the good land resulted in price increases to a point where profits from wheat raising were extremely low. More intensive systems of farming were introduced calling for grasses and legumes to support more live stock. These, in turn, required more highly specialized care and management, the best source for which was found on the family farms.

The years 1900 to 1914 marked an era of steady improvement in the agriculture of America. It was during this period that agriculture came into balance with labour and capital, resulting in an equality of purchasing power which stimulated free exchange of goods. Data from the years 1910-14 inclusive have been used freely as the base from which to project comparisons of price indices and purchasing power. It was a period during which the 6¼ millions of American family farms were functioning at their best. And then came the World War which seriously upset the prevailing equilibrium towards which we have been seeking steadily for nearly twenty years to return.

The withdrawal of able-bodied young men from the farms to serve

in armies and navies shortened materially the farm labour supply. This shortage was offset to a large degree, however, by the introduction and use of more machinery. The improvement of the internal combustion engine, invented towards the close of the nineteenth century, and its adaptation as power for operating farm implements brought revolutionary forces into action. The merits of mechanized farms and large-scale farming were again advanced and commercialized production advocated. The displacement of horse power by gas-driven engines increased the capacity of the operator for handling more land and lessened his out-of-pocket costs for hired labour. The combine harvester and thresher displaced in a measure the self-binding harvester and separate threshing rigs, at least in the Corn Belt and Great Plains areas. Enterprising farmers, prompted by good prices for farm products, began to enlarge their farms and many of them their debts as well. Bonanza farms were again talked of, and some came into existence. One, of 150,000 acres, brought international prominence to its operator. Others, smaller and less advertised, brought more permanently satisfactory returns to the operators. Mechanized agriculture, chain farming, and co-operative ownership and operation were talked of in turn, but the Armistice, embarrassing surpluses, and finally the stock market crash and financial panic put an end to speculation and to further expansion in agricultural production. The family farm is again in the ascendancy, modified to be sure in form and equipment, but still a family farm. No longer can it be looked upon as self-sufficient in the old sense of the term. It can be made so if necessary, but at present the families for the most part prefer to operate on the exchange or commercial basis. Like most families in other social groups, they want variety in food beyond what the farm produces; they want store clothes rather than homespun, and get them; they want electric light, furnace heat, bath tubs, and running water; they also want educational and recreational privileges and as good a standard of living as others enjoy. To get these things, the products made must be marketable and salable. They must be converted into money which in turn may be converted into the articles wanted and needed for family use. Farming on the average American farm is now organized on a commercial rather than on a self-sufficiency basis, but it is still a family farm.

The degree to which the family farm has become commercial is suggested by accounting records kept by 150 dairy farmers in south-eastern Minnesota. The average gross cash income of these farmers for the years 1928 to 1935 inclusive was \$4,057. The average cash

farm expense, including taxes but not including interest or principal payments, was \$2,184. The average size of these farms is 192 acres, and the average capitalization nearly \$21,000. These farms are larger and are probably operated more profitably than the average farm in this section. They are, however, all family farms, but operated largely on a commercial basis. They can hardly be classed as 'smallholdings' or 'peasant farms'. They are real business enterprises.

It is true that many of these farms are badly burdened with debt; that large areas are held by mortgage companies, trusts, and corporations; that tenancy is increasing at a rapid pace, particularly in areas of good agricultural land where price ranges are high. However, the fact remains that the land held by these interests is leased in moderate-sized tracts, and these tracts are operated by typical farm families. The sustained interest of the Federal Government in the family farm unit is reflected in more favourable farm credit institutions and facilities, lower interest rates on farm loans, and subsidies for soil-building practices.

One cannot always safely predict the future from the past, even when the past is much longer than that covered by American agriculture. Three hundred years is too short a time in which to mould the agriculture of a country possessing such widespread and varied land resources as America. There is nothing in sight, however, to justify the opinion that family farms are breaking down and will disappear. On the contrary, there is much evidence that serious thought and effort are being given to preserving these family units and to safeguarding the productive power of the land. For the past century farmers of America have been exploring the possibilities of the country. At the same time they have been exploiting the soil for what could be wrung from it. In this respect they are no worse than the capitalists who have exploited the forests, the iron and coal mines, the oilfields, and even the people, for private gain. Agriculture has been in flux as it is almost certain to be in any new country where the proportion of good land to population is so great and where an outlet for agricultural products can be provided. All America up to the present time has been chasing the dollars so easily won by the extraction and sale of accumulated natural resources. Lest some may be inclined to criticize America for this, I hasten to say that British, German, and Scandinavian cousins who have become United States citizens may be discovered right up in the front ranks of the dollar chasers.

The period of wanton exploitation is over. America is now

coming into a period of constructive development. More conservative land management, less wasteful cropping practices, better utilization of products raised, and improved organization and operating plans already mark present-day agriculture. Farm operators are rapidly accepting the findings of agricultural scientists and applying them in the management of their farms. The Federal Government, in the view that national safety and prosperity lie in keeping a fair proportion of the population on farms, is giving serious and sustained consideration to long-time plans which will reduce the risks and increase the incomes from the family farms that are likely to comprise our agriculture for a long time to come.

There will be adjustments in the family farm from time to time and from place to place as in the past. The size of the unit must be adapted to the type of farming followed and to the capacity of the family to operate it. The vegetable and small truck farmers need only 5 to 10 acres for an intensive family unit. The orchardist and fruit grower need 40 to 80 acres. The dairy belt farmer is content with 20 to 30 cows and 160 to 200 acres of land. The corn, beef, and hog raiser wants 240 to 320 acres, well stocked. The Kansas, Dakota, and Montana wheat growers must have two to four sections—1,280 to 2,560 acres—to provide employment for their heavy investments in modern power and machinery. The ranch man must have sufficient land to support a herd—400 to 800 or more—of breeding cows as the foundation of his farm. Yet these are all family farms in the true sense of the word.

I believe the family farm will persist in America; that it will be more intelligently operated than in the past; that the drudgery of manual labour will be lightened; that the income will be larger and more secure; and that the family interest and satisfaction in its possession will remain one of the great assets of the nation.

DISCUSSION

J. P. MAXTON, *Oxford, England.*

I think that this is an excellent paper by Professor Boss. Not only is it one of the pleasantest that we have listened to, but also behind it there is a touch of what I might call humanity which perhaps is sadly lacking in many of the papers which we have at our Conferences. In addition to that I think his point is exceedingly well made. He shows very clearly how this thing they call the family farm in America has continued to be called the family farm by Americans in spite of the fact that it is in reality no more the family

farm of four or five generations ago than the combine-harvester of to-day is the scythe, cradle, and flail of earlier times. Dr. Warren, of course, made much the same point in the course of his discussion on Thursday, but Professor Boss's account this morning puts the matter in its clearest light.

The point which I think we would have to discuss very seriously is this. It is all very well to go on calling it a family farm, and to say that that is essentially the unit. But Professor Boss points out very clearly to us that those farmers of to-day are expecting a very great deal more out of their farms than their ancestors were, even although both are called family farms. I should doubt very much whether they can get all those things which they want out of the farm unless they are prepared to do rather more than simply add on some more acres to meet the needs of a tractor, a thresher, or whatever it is that happens to be invented. It seems to me they will have to go to the stage of organizing labour, of having more labour on the farms, and using that in an adaptable and flexible way so as not only to get a bigger output per man but also to provide more leisure for the people who are working there.

I do not see how America can expect to maintain what seems to me to be rather a high standard of living which the family farmers are hoping to get out of those farms, without going to the extent of adopting what, when all is said and done, has been one of the biggest economies of modern economic development, namely, the organization and the dovetailing of the work of maybe five, ten, or twenty men to get the job done, instead of one man as on the family farms with perhaps one assistant trying to handle the whole thing himself with a little family labour. There is no flexibility about it. There are no opportunities for developing the economy of labour. As time goes on, the economy of man power, leaving out altogether the factor emphasized by Dr. Warren of what it costs—because it is still high whether a family farmer seeks a high standard of living or a wage-paid worker demands a high wage—the economy of man power will be more and more the dominating factor in economics. The adherence to the family farm unit does not provide scope for it. Professor Boss's paper itself makes it clear that it has mainly been possible in his country up to now because more land could be got as each stage of development demanded it. But we have to face the twin issues that the extra land will not always be easily available and that the world may not need the products of the extra land that is available. The family farm has only been able to change its complexion in the way that Professor Boss has shown because these issues did

not have to be faced for any length of time. Even then it is not certain that the American structure can provide for the high standard of living, the creation of leisure, the use of skill and special ability, which, in the economic world as a whole, have been made possible by the organization of labour.

J. F. DUNCAN, *Scottish Farm Servants' Union*.

I am very sorry that we did not have this paper read to us by Professor Boss before we had that rather heated discussion the other evening about the family farm, because, as Maxton has said, although we use what most people think is the same language, America gives us not merely a different accent sometimes to the words which we use in England but gives an entirely different meaning. When we speak about the family farm we think of the unit which supports the family and which the family works. Now, what I would like to know is to what extent the family farm in America is self-supporting so far as the provision of labour is concerned, or how far hired labour is used on the American family farm. Then I would like if our American friends would go further and give us some idea of what that labour means, not simply in terms of persons, but to give us some labour unit that we can use for comparative purposes. I agree with Maxton in that, if the American farm is to provide these other conveniences of civilization, then there must be some social control exercised over labour. You cannot leave the farmers, either in America or anywhere else, free to work even the members of the family themselves for unrestricted hours of labour in the attempt to obtain the same standard in competition with industry, and in competition with other people employed in other forms of agriculture.

We are quite definitely forced to that position in this country, and, in other countries in Europe where there is considerable employment of labour, the same demand is being made everywhere by the farm worker; that there shall be some restriction on the hours of work, that there shall be some definite provision of leisure for the farm worker, and that there shall be other social provisions as well. That is quite certain. These demands are being made, and it is certain that provisions of that kind will be made. The point I wish to put is: can we conceive of two different standards running side by side in the farming community; on the one hand a standard for hired labour embodying restriction of hours and other items of social provision; on the other hand, no such standards for small farmers and their families? Can we concede a certain standard of leisure for the hired

worker and deny it to another part of the community not very distinctly differentiated? There cannot be any great distinction between the working farmer that I saw in a considerable part of America and the hired man. Sooner or later every community is forced to take special steps to protect hired labour. Can you imagine a system going on where the other people are left without any protection except the protection against the money-lender? The protection being giving against the money-lender on the family farms is simply one means of social protection that the State is extending to the family farm on a parallel with the protection which the State is compelled to extend to the working class in other ways.

These are the difficulties I see for that kind of farming. Incidentally in his paper, Professor Boss points out that the development of large-scale farming in America was defeated, not by any fault in organization, not by anything that can be said to show that agriculture is more difficult to organize on these lines, but was defeated by the fact that the influx of immigrants provided the source of cheap labour which made it quite impossible for any larger scale of organization to be adopted. I suggest that however desirable it is to maintain the family homestead—and I think it is very much more a family homestead than a family farm, a living place for the family that the young people can go out from and come back to—it is not desirable that economic organization should be defeated by the exploitation of labour. It was a fact that the big-scale farms could not pay wages to enable them to compete with the unpaid labour of the family farmers. That was what it amounted to. It is the same thing that we are going through now. The family farm during the depression has continued, but at what cost? It has continued at the cost of the capital of the family and at the cost of the labour of the farmer which has gone unpaid. I suggest that if we are looking to development along the lines that civilization has been taking in the last generation, a development which takes into account not merely the cash return and not merely the question of getting a living, but the quality of living as well, then we cannot allow the exploitation of the family farmer and his family during times of depression and during times of falling values. That cannot be allowed to go on socially any more than we can allow the factory owner to use up children in the factory, or the owners of the steel plant to use up the men by working them excessive hours. We have to begin to apply social standards to the family farm and to the quality of life on the family farm in the same way as we are

doing it in the industrial areas and in those areas of Europe where agriculture is employing a considerable amount of labour.

While I have expressed disagreement on many points, I want to express my own thanks to Professor Boss for a most interesting description of the development of the system in America and for setting the problem in a form not merely, as Maxton says, more human than a good many of these papers that we have, but also in a form that is readily understandable to those of us who imagine we are speaking the same language until we discover our mistake.

C. IHRIG, *Budapest, Hungary.*

The paper of Professor Boss is really very closely connected with the subject which was dealt with on the fourth day of the Conference, that is, the question of the family farm and the large farm, which became, so to speak, the 'leitmotiv' of our generally very harmonious orchestra. I think Mr. Duncan who has just spoken also had recollections of his remarks on that subject. If I understood him correctly, he made the following statement: We cannot simply look on while there are two types of workers in agriculture, one which is socially protected against exploitation of his labour, and one of which the social body takes no account at all. The latter is the peasant and the working members of his family. This perception of Mr. Duncan's is completely out of line with the state of affairs of agriculture in central Europe and its farming population. Certainly there are years, districts, and farms when and where the agricultural labourer is better off than the free peasant owning his holding. But it is a curious fact that even under these conditions there is a continual demand for further distribution of land, even on the part of the workers who witness the state of the peasant and his family. These workers envy the poor exploited peasant and his wife and children.

I think we in central Europe are competent to speak on this question, for we have, particularly in Hungary, large farms as well as small, and therefore very pressing problems of hired labour. If there is an agricultural proletariat anywhere, it is certainly in Hungary. That is not a pleasant state of affairs, but at least it gives us the opportunity of studying rural socialism. This Hungarian rural proletariat seeks power, but in the forty or fifty years of its existence no programme could ever take root among the proletariat, if it did not provide for the distribution of the land in small independent peasant holdings. Every socialist agrarian programme comprising operation of the land under collective, co-operative, or State ownership has been

rejected. I will not investigate whether it really holds good, as Mr. Duncan has claimed, that the standard of life of the worker is higher, or whether the social protection of most advanced countries affords him independence and security to a greater degree than the family holding where all efforts are made in the individual interests of the operator and his family. I would only point out that in the mind of the labourer the peasant conditions of life are not conceived to be undesirable—on the contrary. For reasons of efficient production, it may seem desirable to abolish independent peasantry, but for social reasons it is undesirable, because it would create social conditions of dissatisfaction. Even if the peasant often works harder and longer than the labourer, he is willing to do so to preserve his independence. Easy migration from the land, as found in America, is not to be found in central Europe. The peasant clings to his land, even if the returns are not equal to half what his wage-earnings in the cities might be. Experiences, therefore, in America or England cannot be generalized. And if in some countries the family holding is only an economic and not a sociological unit, this does not apply to other countries. It is very important that it has been the centre of so many of our discussions, for one of the problems, most difficult to understand, is why the small peasant farmer in central Europe should prefer to stay on his holding rather than earn higher wages as a labourer.

ANDREW BOSS, *University of Minnesota, U.S.A.*

May I have just a few minutes to explain some of the things that were not noted in my paper? I perhaps made a mistake in assuming that all people understood the conditions surrounding the American family farm. As I indicated in the opening of my paper, people came to America to establish independent homes for themselves where they might live their own lives. We pride ourselves on being a democratic nation, not politically only but socially, and the farmer on the farm regards himself as very little different from the man that he employs to work for him. On this group of farms from which I quoted figures, I presume without turning to the data on the case that about 10 per cent. of the total labour on those farms is performed by hired labourers. The farmer and his wife with their family do the greater part of the farm labour, hiring only during the critical periods of the year such as harvest time or possibly in putting in the crop. When they do hire a man he is on the same social level as themselves. Whether he be a son of a neighbouring farmer, as frequently happens, or whether he belongs to the village or comes from a large city, or whether he be as we call it a hobo labourer, he is taken

into the family as a member of the family, he is fed at the farmer's table and sleeps under the same roof. There is no distinction, therefore, between the labourer and the farmer. That is the case of the group of family farms such as I have described.

I tried to indicate to you that there is no such thing as *the* family farm. Each one is different. We have a great many family farms on which labour is hired all the year round. In those instances, they are in many cases better farmers and are doing just what is being done here in England, providing their workers with a cottage and giving milk and meat and a garden in addition to the wage, but the worker is established on the same social level as the farmer himself. We do not have any distinction of worker and gentleman farmer; in fact we have no gentlemen farmers in America. We do have a great many business men who have farms that correspond to your gentlemen's estates here. We do not call them estates; we call them 'folly farms', a unit on which to spend money, made elsewhere, for the benefit of workers and the farm families. That condition among our family farms is hard for many Europeans and people in Great Britain to understand and appreciate. One has to live among these farmers really to understand the situation.

As to Mr. Duncan's point that the farm labourer and the farmer himself is being exploited, I agree that the labour of the farmer and of the farm labourer has been exploited in many cases. They have not been fully rewarded for the labour performed. There is not a sufficient number of farm workers in America to justify workers' unions, and we have no workers' unions among the farm workers of America. We do have them in all the trades and industries, where the 10-hour day was first advocated, then the 8-hour day, and now the 6-hour day is wanted. Whether they will get it or not remains to be seen. The farm labourer has no need for such a thing because he himself works in the field with the farmer, and the labourer's hours are usually the same as the farmer's hours. On well-organized farms where a number of labourers are hired, a 10-hour day at least is recognized. On our Government and institutional farms, the 8-hour day is recognized just as in the trade unions, and in my judgement the time is not far distant when the 8-hour day will be the established thing for the farmers, and I am inclined to think the farmer can organize his work so that he can do as much in 8 hours as he now does in 10 or 12 or 16. Our farmers make great claims for working 16 hours a day. That is their day, they say, leaving 8 hours for sleep. I have frequently pointed out to groups of farmers to whom I talk that there is quite a difference between being awake 16 hours

and working 16 hours, and that if they apply themselves they might do their work in 8 hours and then sit on the fence and watch the animals grow the other 8 hours, and they would accomplish the same.

Those points about our family farms are the things that we have become so accustomed to that we hardly feel it necessary to explain. We know so well what they are and what the conditions are that we are not much concerned about them. The family farm, or the land shall I say, in America is the shock absorber for the leftovers from all the trades and industries. When a man is out of a job he goes out on to a piece of land, establishes his garden, and grows his own food, or he establishes a little larger farm as a subsistence farm, or a still larger farm which he operates and usually turns into a successful farm. Most of our farmers have grown from farmer's sons, to hired men, to tenants, to farm owners. If they did not like the farm, they have gone into some other sort of business. It is more easily possible for our American rural workers to determine for themselves what they are going to do, what they want to be, than I think it is here. That is the great advantage of the working class, and it is one of the explanations for our farmers being willing to work so long for so small a return. They still have in mind that family farm, that place of refuge, that place of social security, to which they can return if they wish to do so.

We have had that phase of the question brought back to us lately in this period of depression. In most of our States there has been an increase of all the way from 2,000 to 5,000 farms per State, according to the last census. These farms are small tracts on which families have settled down, and built small houses, having returned to the land for subsistence. They are counted as farmers, though they will disappear again when good times return. I think sometimes that if the economists and the uplifters and the reformers would leave the farmers in peace for a while and allow economic forces to work, without artificial interference, exchange values would sooner find their equilibrium and prices return to a more normal level.

CHANGES IN CHINESE CURRENCY AND THEIR EFFECT UPON COMMODITY PRICES

A. B. LEWIS

University of Nanking, China

IN discussions of the economic situation which has prevailed in the world during the past seven years, the term 'world depression' is frequently heard. This term is often used as if there actually were, or had been, an economic depression which (1) weighed equally upon all commercial peoples, (2) lasted during the same period of time in all countries, and (3) was caused by factors inherent in world commercial relations and not by conditions that could be controlled within national boundaries.

In this paper there is outlined evidence which leads towards the opposite conclusion, namely, that there is and was no such thing as a so-called world depression, and that the fundamental causes of economic depression, even though world wide in extent, nevertheless lie within the control of individual countries. The evidence outlined in this paper is small compared with the large mass which is available, and which leads an increasing number of people to draw the conclusion that the control of currency values is the world's foremost among many serious problems.

For many years previous to October 15, 1934, the Chinese currency was on the silver standard. By this statement is meant that the principal currency of China was silver coins and bars together with banknotes redeemable in fixed amounts of silver. Since silver was the basis of the currency, commodity prices in China were influenced by changes in the purchasing power of silver.

Before 1870 the currencies of most nations were on the silver or bimetallic basis. In the 1870's the nations began to place their currencies upon the gold standard and to demonetize silver. This process of demonetization continued until recently and resulted in lessening the world's demand for silver. As a consequence of reduced demand, the purchasing power of silver in England in terms of wholesale commodity prices fell from an index number of 209 in 1887 to 55 in 1931.¹ In the United States the purchasing power of silver fell from an index number of 202 in 1887 to 48 in 1931. In

¹ Figures from report of Committee for the Study of Silver Values and Commodity Prices, Ministry of Industries, China, *Silver and Prices in China*, tables 1 and 2.

these calculations the purchasing power of silver in the period 1910 to 1914 was considered 100.

While in the United States and in England the falling value of silver was reflected by a declining purchasing power of silver in terms of other commodities, in China, where silver was the currency, its falling value resulted in a continuous rise in the average level of commodity prices. According to figures compiled by the Nankai Institute of Economics in Tientsin, wholesale prices in China rose from an index number of 48 in 1887 to 162 in 1931. This rise in average wholesale prices indicates a decline in the purchasing power of silver in China from an index number of 209 in 1887 to 62 in 1931. These figures for the decline in the purchasing power of silver in China are similar to those for the United States and for England. A similar correspondence, with temporary exceptions, was observed throughout the period 1887 to 1931.

Between 1887 and 1931 the price level of China rose at a fairly even rate which averaged more than 2 per cent. per year. There was no drastic inflation during or following the World War. There was no deflation in 1920. There was no panic in 1929. From 1929 to 1931 commodity prices rose. If the United States had been on the silver standard during the period 1887 to 1931, a similar history probably would have been theirs.

The decline in the purchasing power of silver previous to 1931 was world wide and reasonably uniform in degree in different places. Only in China, or in other countries on the silver standard, was this decline the factor which determined the trend in the average level of wholesale commodity prices.

In the early part of 1931, the purchasing power of silver in England, in the United States, and in China reached its lowest point and began to rise. In the United States and in England the lowest purchasing power of silver occurred in February; in North China, in May; and in Shanghai, in August 1931.

As the purchasing power of silver rose above the low point, commodity prices in China fell. According to the index number compiled in Shanghai by the Chinese National Tariff Commission, when 1926 prices are equal to 100, wholesale prices fell from 130 in August 1931 to 108 in December 1932, to 98 in December 1933, to 90 in July 1935, the lowest point. The decline was interrupted in 1934, but altogether it was about 31 per cent. The decline would have been greater but for monetary measures taken by the Chinese Government.

There are several factors which may account for the rise in the

value of silver which began in 1931. First, the long-time decline in the purchasing power of silver had apparently caused the production of silver to fall behind the rate of production of basic commodities in the world.¹ This effect appeared about 1913, if the relative production of silver and basic commodities during the years 1880 to 1914 is considered normal. Perhaps by 1931 the continued lag in the annual production of silver had influenced the world's silver stocks sufficiently to bring about a reaction towards a higher value for silver.

Secondly, the sharp rise in the value of gold that began in 1929 made gold expensive with respect to silver as a store of imperishable value for purposes of hoarding. Perhaps this fact caused many private individuals to hoard silver instead of gold, thus raising the demand for silver.

A considerable rise in the value of silver had occurred many months before the United States or any other country had passed any laws tending towards the remonetization of silver. The London Silver Agreement, which tended to increase the demand for silver, was signed in July 1933, when silver had already been rising in value for about two years. It was ratified by the United States in December 1933. The silver purchasing policy of the United States became effective in August 1934, more than three years after silver had begun to rise in value.

The fall in the commodity price level of China that began in 1931 had brought about a severe economic depression in China by the end of 1933.² As wholesale prices fell, less flexible prices failed to decline correspondingly. These less flexible charges included wage rates, debt service charges, transportation fees, and retail prices. Industrial production was sharply curtailed. Imports, which were at a high level in 1931, declined drastically in value and in volume. The flow of credit from urban to rural centres was stopped and was replaced by a liquidation, whereby funds began to accumulate in cities.

The distress in agriculture was acute. The prices received by farmers for rice, wheat, barley, millet, kaoliang, cotton, and other products fell much lower than the prices which they paid for salt, sugar, cloth, cooking oils, and other essential goods. Farm wage rates failed to decline. Taxes were not reduced.

The farmers sell about 20 per cent. by weight of the principal

¹ *Silver and Prices in China*, Chapter II.

² Lewis, A. B., *Economic Depression in China*, a series of nine articles, Dept. of Agricultural Economics, University of Nanking, mimeographed 1935.

crops which they produce.¹ They depend upon the money thus obtained to purchase what would be considered by most western farmers the barest necessities. Their inability to purchase these necessities, to pay their normal debts, to pay their taxes, to pay their rent, and to hire labour constituted an economic depression in a society where the average level of consumption, on western standards, is very low.

Anybody who still thinks that the falling prices which give rise to an economic depression are due to over-production of commodities should go to China. In the midst of the unusual distress which already existed in China as a result of the rise in the value of silver, news came of the legislation on silver which was pending in the United States. In August 1934, when the Silver Purchase Act began to operate, commodity prices in Shanghai were at a level of 99·8, compared to 130·3 in August 1931, if 1926 prices are 100. On this basis the index number of the purchasing power of silver was 100·2.

As soon as the American Silver Purchase Act began to operate, the purchasing power of silver resumed its rise. Unusually large quantities were shipped out of China during the months of August, September, and October 1934. In order to prevent a further loss of monetary metal and also to halt the decline in commodity prices in China, the Chinese Government on October 14, 1934, announced that a tax of 7½ per cent. would be collected upon all coined silver exported from China, and that uncoined silver exports would pay a tax of 10 per cent. In addition, an equalization fee, to be announced each day, would be collected in an amount sufficient to equal any remaining profit that might be gained by purchasing silver in China for sale on the London or other foreign markets.

In the British Crown Colony of Hong Kong, which had an independent currency based upon silver, no measures were adopted in October 1934 to disconnect the currency from silver. Instead, the currency was held to such a level in foreign exchange that no profit could be gained by purchasing Hong Kong credits, converting them to silver, and exporting the silver to London. The currency was held strictly to the silver standard.

The differing effects upon the purchasing power of their currencies which were produced by the diverse policies of Hong Kong and China are best observed by reference to the accompanying chart. On Chart 1, the purchasing power of silver in the United States is shown to have risen from an index number of 99·7 in July 1934 to

¹ Buck, J. L., Preliminary data from the study: *China, Land Utilization*, University of Nanking.

a maximum of 149.4 in May 1935, from which it then declined to a level of about 130 in September, October, and November. In England it rose from an index number of 102.7 in July 1934 to a maximum of 166.4 in May 1935, from which it declined to a level of about 140 in September, October, and November. In Hong Kong, where no steps were taken to divorce the currency from the silver standard, the purchasing power of the currency rose from an index number of 109.1 in July 1934 to a level of 142.7 in June 1935, an index number equal to that for the United States. The purchasing power of silver in Hong Kong then continued to rise, until in October it had reached a height comparable to that for England.

This rise in the purchasing power of the currency in Hong Kong was calculated on the basis of a corresponding fall in commodity prices. This fall in commodity prices greatly intensified the economic depression in Hong Kong.

As soon as the export tax and equalization fee were imposed on exports of silver from China in October 1934, the Chinese currency fell in value in foreign exchange approximately by the total of these fees. The purchasing power of the currency in China declined from an index number of 104.1 in October 1934 to 100.1 in February 1935. About the first of April 1935, the export levies were discontinued. The Chinese bankers, however, agreed with the Government not to export any more silver under any circumstances. This agreement, together with measures to prevent smuggling, constituted a practical embargo on the exportation of silver.

Although the Chinese currency was actually not on the silver standard in foreign exchange after October 14, 1934, nevertheless, strong efforts were made to hold its value in foreign exchange as high as these conditions would permit. Rumours of impending devaluation were denied vigorously, although devaluation in foreign exchange had in fact occurred. As a result of these efforts, Chinese currency took some small part in the rise of the value of silver, and its purchasing power had risen to a level of about 110 in the months of July, August, and September 1935. In the summer of 1935, the economic depression in China reached its severest depth.

During the year following October 14, 1934, the redemption of bank notes in silver was nominally maintained, but an increasing number of restrictions were imposed upon this redemption. By the summer of 1935, much silver had disappeared from circulation, because of hoarding and smuggling out of the country. Premiums on silver in relation to bank notes were available almost everywhere. Internal as well as external barriers to the free movement of silver

were common; and wherever such barriers existed smuggling was taking place. It is safe to say that in the summer of 1935 currency conditions in China were in a state of chaos.

The primary cause of this chaos had been the rise in the value of the currency beginning in 1931. Therefore, when the Chinese Government set about reconstructing their currency in the autumn of 1935, their first step was to allow the currency to fall in value in foreign exchange. This fall was accompanied by a corresponding rise in basic wholesale commodity prices, and by a slower rise in average wholesale prices. On November 3, 1935, the Government announced that the notes of the three Government Banks would henceforth be legal tender, and that the currency would henceforth be stable in foreign exchange at the level then prevailing. Since the Central Bank of China was the only source of foreign exchange, this decree stopped the depreciation of Chinese currency which had begun about two weeks before. Basic wholesale commodity prices stopped rising at once, but average wholesale prices continued to rise slowly towards a point where they would be in adjustment with the reduced value of the currency.

As shown on Chart 1, the purchasing power of Chinese currency in terms of average wholesale prices fell from an index of 109.8 in September to 96.8 in November 1935 and had declined to 94.5 in May 1936. Wholesale prices were therefore at a level of almost 106, when 1926 prices equal 100, and were probably due to rise eventually to a level above 110, or to about that which had prevailed in 1930 and 1932.

In Hong Kong, where the currency had been permitted to absorb the full effect of the rise in the value of silver, much greater depreciation was required in order to reduce the currency value to an accustomed level. This depreciation began in October 1935. The purchasing power of the currency fell from an index of 139.7 in October to 118.6 in November and to 107.5 in December, in terms of wholesale import prices. The currency was then stabilized in foreign exchange, all connexion with silver redemption having been abolished. The level of stabilization was such as to restore the customary parity of about 90 Hong Kong cents for one Chinese dollar. By April 1936, the purchasing power of Hong Kong currency had fallen to 99.2. Eventually a purchasing power parity between the Hong Kong and Chinese currencies will probably be fully re-established.

About December 9, 1935, after the Chinese and Hong Kong currencies had left the silver standard completely, the price of silver

began to drop precipitously, and by February 1936 the purchasing power of silver in England and in the United States had declined to index numbers of 93 and 89 respectively. This decline, due apparently to a change in the United States silver purchasing policy, had

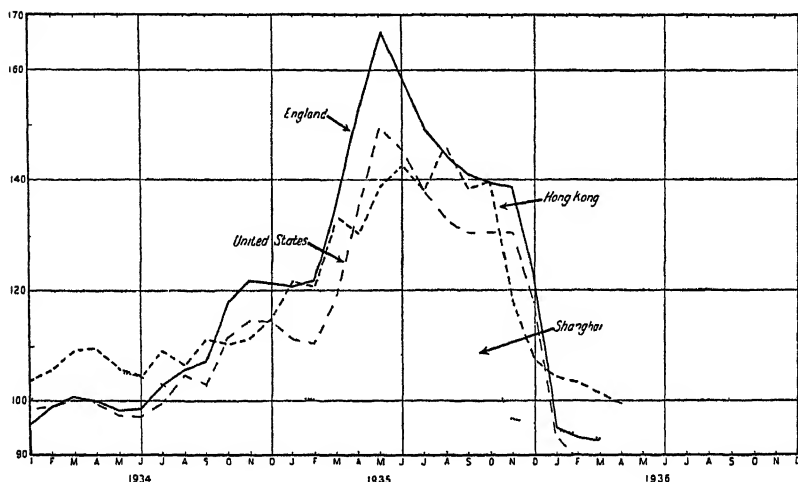


CHART 1. PURCHASING POWER OF SILVER, ENGLAND AND UNITED STATES, AND PURCHASING POWER OF THE CURRENCY, CHINA AND HONG-KONG, 1926 = 100

no effect upon the Hong Kong or Chinese currency values, since these currencies were no longer redeemable in silver.

The effect of Chinese currency changes upon Chinese farmers can be deduced from farm price relationships. On Chart 2, the relation between prices paid by farmers for commodities used in living and production and prices received by farmers for crops is shown. Although the indices refer only to conditions in the one locality of Wuchin, Kiangsu Province, near Shanghai, more extensive price studies have shown them to be typical of China.

The annual figures show that in 1932 prices received by farmers had fallen to a level of 161 compared with 189 for the retail prices paid by farmers, when prices in 1910-14 are 100. During 1933, when monthly figures were available, this discrepancy was widened. In 1934, a severe drought, comparable to that which occurred in North America, prevailed in the principal farming regions of China. For this reason, farm prices in Wuchin soared to a high point of 247 in November 1934. This rise was due to acute scarcity, sufficient to cause starvation in many areas, and in no wise relieved the agricultural depression. As the new crops came on, farm prices again fell below the relative level of prices paid by farmers.

The depreciation of Chinese currency in October 1935 brought about a sharp rise in farm prices, from which a partial reaction occurred. Retail prices paid by farmers were less strongly affected. By May 1936, the index number of prices received by farmers in

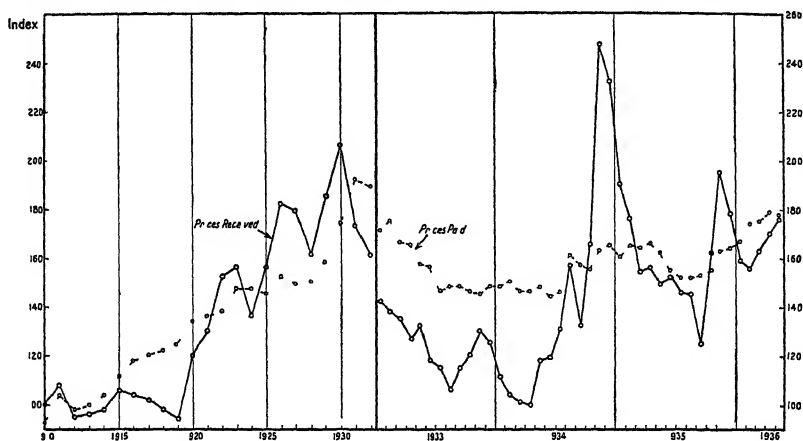
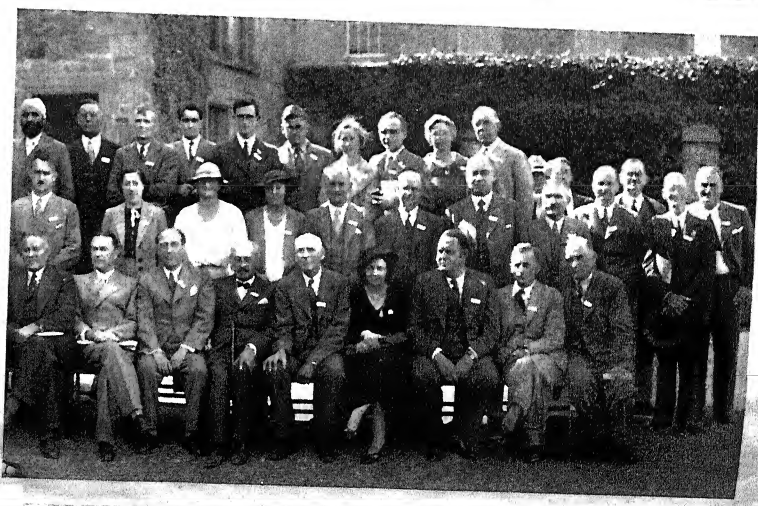
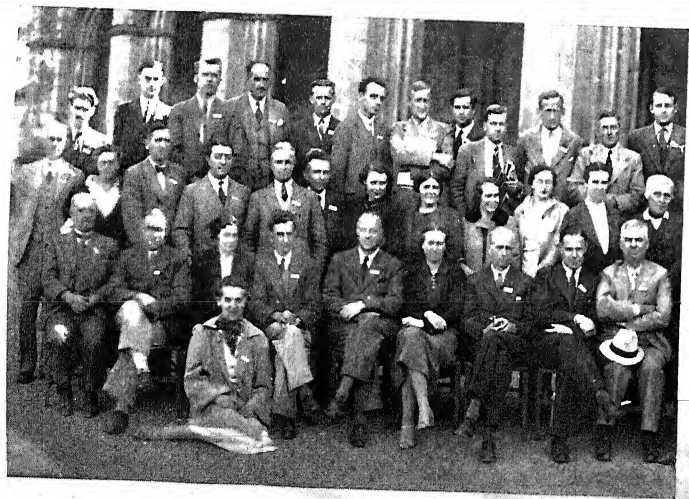


CHART 2. INDEX NUMBERS OF PRICES RECEIVED BY FARMERS, AND OF RETAIL PRICES PAID BY FARMERS, WUCHIN, KIANGSU, CHINA. 1910-14 = 100.

Wuchin, Kiangsu, stood at 176, while the index number of prices paid by them was 178, when 1910-14 prices are 100. If the Chinese Government continues to manage its currency so as to maintain a stable internal level of prices, the relationships between prices received and prices paid by farmers will undoubtedly continue to be equitable. If the currency is not made redeemable in a fixed amount of silver or gold, the Chinese Government can maintain a stable level of commodity prices as long as its governmental powers remain intact.



INTERNATIONAL CONFERENCE OF AGRICULTURAL ECONOMISTS

CONFERENCES

First, 1929: Dartington Hall, Totnes, Devon, England.

Second, 1930: Cornell University, Ithaca, New York State, U.S.A.

Third, 1934: Bad Eilsen, Schaumburg-Lippe, Germany.

Fourth, 1936: St. Andrews University, Fife, Scotland.

OFFICERS

President

ELMHIRST, L. K., Dartington Hall, Totnes, Devon, England.

Vice-Presidents

WARREN, G. F., Department of Agricultural Economics and Farm Management, Cornell University, Ithaca, New York State, U.S.A.

SERING, M., Deutsches Forschungs-Institut für Agrar- und Siedlungswesen, Berlin-Dahlem, Luciusstrasse 9, Germany.

Hon. Secretary and Treasurer

CURRIE, J. R., Research Dept. (Economics), Dartington Hall, Totnes, Devon, England.

THE International Conference of Agricultural Economists was inaugurated during the summer of 1929, when fifty economists from eleven countries met for two weeks at Dartington Hall, Devon, England, on the invitation of Mr. L. K. Elmhirst. The Second Conference was held in 1930 at Cornell University, Ithaca, N.Y., U.S.A., and was attended by over 300 members and visitors, twenty countries being represented. At this meeting the formal Constitution was drawn up and approved. The Third Conference held at Bad Eilsen, Schaumburg-Lippe, Germany, in 1934, was attended by 170 members, 19 countries being represented. The Fourth Conference was held at St. Andrews when 219 members and visitors attended, of whom 127 were from 21 countries outside of the United Kingdom.

The Conference has now a total membership of 343, with Groups or Correspondents in 30 countries. Its representative character has been steadily growing since the first informal gathering in 1929, until it now embraces the majority of countries where the study of agricultural economics is pursued.

The object of the Conference is that of fostering development of the services of agricultural economics and of furthering the application of the results of economic investigation of agricultural processes and agricultural organization in the improvement of economic and social conditions relating to agricultural and rural life.

Membership is open to any person or institution connected with the study of agricultural economics. The subscription is £1, \$5, RM. 20, or the monetary equivalent of £1 at par, for the period from one conference to the end of the next. The majority of members are professional agricultural economists engaged in research, teaching, or public administration, but the membership is representative as well of a wide range of agricultural and economic interests. Applications may be made to the Secretary, who will put the applicant in touch with the appropriate national correspondent.

Meetings are held at intervals of two or three years, at a time and place determined by the Council. No two successive meetings can be held in the same country. The meetings afford a unique opportunity of personal intercourse with fellow workers from all parts of the world.

Proceedings consisting of papers and discussions at each conference are published, and members are entitled to one copy. Extra copies may be purchased by members at reduced rates. Copies of the Proceedings of the First, Second, Third, and Fourth Conferences are available on application to the Secretary, or to Dr. G. F. Warren, Department of Agricultural Economics, Cornell University, Ithaca, N.Y., U.S.A.

CONSTITUTION

(ADOPTED AT THE SECOND CONFERENCE)

NAME AND OBJECT

The name of the organization shall be The International Conference of Agricultural Economists.

The object of the Conference is that of fostering development of the sciences of agricultural economics and of furthering the application of the results of economic investigations of agricultural processes and agricultural organization in the improvement of economic and social conditions relating to agriculture and rural life.

MEETINGS

Meetings shall be held at a time and place determined by the Council. No two successive meetings shall be held in any one country.

The Conferences of 1929 and 1930 shall be called, respectively, the First and Second International Conferences of Agricultural Economics.

MEMBERSHIP

Membership shall consist of individuals who pay 20 RM., \$5, or £1, or the monetary equivalent of £1, for the period from one Conference to the end of the next.

Libraries, corporations, and similar institutions may become Members if a duly accredited representative is appointed by each such institution.

Those who become Members within one year from the date of the adoption of this Constitution shall be considered Charter Members.

OFFICERS

The Officers shall be a President, two Vice-Presidents, and a Secretary-Treasurer. The Officers shall hold office for a period ending with the close of the next succeeding Conference.

ELECTION OF OFFICERS

The Council shall nominate Officers to be elected by the Conference.

COUNCIL

The Members of the Conference in each country or group of countries may provide for the election of Members of a Council as hereinafter provided:

(a) Each country or group of countries with five or more Members may elect one Member to Council. An additional Member of the Council may be elected by each country or group of countries for each additional ten Members, with a maximum of three Members of Council from any one country or group of countries.

Constitution

(b) Members of the Council shall be elected prior to or during each Conference for the succeeding Conference. The Council elected in 1930-1 shall continue in office for the purposes of the next Conference until the end of that Conference, and the Council constituted in the early part of each subsequent Conference shall nominate Officers and Executive Committee for the ensuing Conference.

It shall be the duty of the Members of the Council to elect an Executive Committee of eight Members, to nominate Officers of the Conference, and to promote the interests of the Conference in the respective countries.

EXECUTIVE COMMITTEE

The Executive Committee shall consist of the four Officers and eight Members elected by the Council. The executive Committee shall arrange programmes and otherwise conduct the business of the Conference. The Executive Committee shall fill any vacancies which may occur in any office.

AMENDMENT OF CONSTITUTION

The Constitution may be amended by a majority vote at any Conference provided the amendment has previously received the approval of a majority of the Council.

PROVISIONS FOR TEMPORARY ORGANIZATION

Since the Constitution does not make all necessary provisions for immediate organization, the Committee submits the following suggestions for the guidance of the Conference until the provisions of the Constitution can be made effective.

1. (a) The Officers for the period of the Third Conference shall be elected by this Conference.
(b) Persons who signify their intention of becoming Members of the Conference before the Conference proceeds to the election of Officers may vote in the election of Officers.
2. (a) The Members of the Council may be elected by Members of the Conference in any country or group of countries as provided for in the Constitution.
(b) The method of electing Members of Council shall be left to the discretion of each electing country or group of countries, but, until the original membership is secured, a Correspondent shall be appointed by the Executive Committee to canvass his country for Members and provide for the election of Members of the Council.
3. (a) The Members of the Council when selected shall become Members of the Executive Committee until a total of sixteen or more Members of the Council has been selected by Members.
(b) When 16 or more Members of the Council are selected, the Officers of the Conference shall arrange for the election of eight Members to the Executive Committee by the Members of the Council.

LIST OF OFFICERS AND MEMBERS

(For 1934-6)

OFFICERS

President

ELMHIRST, L. K., Dartington Hall, Totnes, Devon, England.

Vice-Presidents

WARREN, Professor G. F., Department of Agricultural Economics and Farm Management, Cornell University, Ithaca, N.Y., U.S.A.

SERING, Professor M., Berlin-Dahlem, Luciusstrasse 9, Germany.

Hon. Secretary and Treasurer

CURRIE, J. R., Research Department (Economics), Dartington Hall, Totnes, Devon, England.

MEMBERS

AFRICA

UNION OF SOUTH AFRICA

Joint Correspondents:

LEPPAN, Professor H. D., Department of Agricultural Economics, University of Pretoria, Pretoria.

VAN DER POST, A. P., Assistant Chief, Division of Economics and Marketing, Union Department of Agriculture, Pretoria.

GELDENHUYS, F. E., Commercial Counsellor, South African Legation, Piazza dell'Indipendenza 3, Rome, Italy.

GROSSKOPF, J. F. W., Chief of Division, Division of Economics and Marketing, Union Department of Agriculture, Pretoria.

AMERICA

CANADA

Council:

ALLEN, Professor W., University of Saskatchewan, Saskatoon, Saskatchewan.

BOOTH, Dr. J. F., Commissioner, Agricultural Economics Branch, Department of Agriculture, Ottawa, Ontario.

LATTIMER, Professor J. E., Farm Economics Department, Macdonald College, Ste Anne de Bellevue.

Correspondent:

BOOTH, Dr. J. F. (See above).

AULD, F. H., Deputy Minister of Agriculture, Regina, Saskatchewan.

BANS, Dr. R. S., Faculty of Agriculture, University of British Columbia, Vancouver, B.C.

BOIS, H. C., Chief, Rural Economics Branch, Department of Agriculture, Province of Quebec.

BRITISH COLUMBIA, THE UNIVERSITY OF, THE LIBRARY, Vancouver, B.C.

BROWN, W. J., 1006, Wellington Street, London, Ontario.

CLEMENT, F. M., Dean, Faculty of Agriculture, University of British Columbia, Vancouver, B.C.

COKE, Dr. J., Assistant Commissioner, Agricultural Economics Branch, Department of Agriculture, Ottawa, Ontario.

List of Officers and Members

- GAGNÉ, C., Professeur d'économie rurale, École supérieure d'agriculture, Sainte-Anne-de-la-Pocatière, P.Q.
- GRINDLEY, Dr. T. W., Chief, Agricultural Branch, Dominion Bureau of Statistics, Department of Trade and Commerce, Ottawa, Ontario.
- KINDT, L. E., 1631 Walnut Street, Berkeley, Cal., U.S.A.
- LAROSE, F., Plantagenet, Ontario.
- LAUREYS, H., Dean, School of Higher Commercial Studies, University of Montreal, Corner of Viger Avenue and St. Hubert, Montreal, P.Q.
- LONGLEY, Dr. W. V., Director of Extension, College of Agriculture, Truro, N.S.
- MCCULLEY, J., Headmaster, Pickering College, Newmarket, Ontario.
- PROSKIE, J., Agricultural Economics Branch, Department of Agriculture, Ottawa, Ontario.
- RICHARDS, A. E., Agricultural Economist, Division of Marketing, Agricultural Economics Branch, Department of Agriculture, Ottawa, Ontario.
- RILEY, Professor C. W., Department of Agricultural Economics, Ontario Agricultural College, Guelph, Ontario.
- SINCLAIR, S., Confederation Life Association, Regina, Saskatchewan.
- STRANGE, H. G. L., Director of Agricultural Research, Searle Grain Company Limited, Winnipeg, Manitoba.
- TODD, S. E., Secretary, The Industrial and Development Council of Canadian Meat Packers, 200 Bay Street, Toronto, Ontario.
- WATSON, W. N., Dominion Economics Branch, University of Alberta, Edmonton, Alberta.

UNITED STATES OF AMERICA

Council:

- CASE, Professor H. C. M., Head of Department, Department of Agricultural Economics, College of Agriculture, University of Illinois, Urbana, Ill.
- HOBSON, Professor A., University of Wisconsin, Madison, Wis.
- LADD, Dr. C. E., Dean and Director, New York State Colleges of Agriculture and Home Economics, Cornell University, Ithaca, N.Y.

Correspondent:

- WARREN, Professor G. F., Department of Agricultural Economics and Farm Management, Cornell University, Ithaca, N.Y. (*First Vice-President of the Conference.*)
- ASHBY, R. C., Associate Chief, Live-stock Marketing, Department of Agricultural Economics, College of Agriculture, University of Illinois, Urbana, Ill.
- BAKER, Dr. O. E., Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D.C.
- BERG, H. A., University of Michigan, East Lansing, Mich.
- BLACK, Professor J. D., Department of Economics, Harvard University, Cambridge, Mass.
- BOALS, G. P., Assistant Agricultural Attaché, Office of the Agricultural Attaché, American Embassy, Bellevue Strasse 8, Berlin W.9, Germany.
- BOND, Professor M. C., Department of Agricultural Economics and Farm Management, Cornell University, Ithaca, N.Y.
- BOSS, Dr. A., Vice-Director, Department of Agriculture, University of Minnesota, St. Paul, Minn.
- BRONSON, W. H., New England Milk Producers' Association, Boston Office, 51 Cornhill, Boston, Mass.
- BRUMLEY, F. W., Department of Agricultural Economics and Farm Management, Cornell University, Ithaca, N.Y.
- CINCINNATI, UNIVERSITY OF (The General Library), Cincinnati, Ohio. (Representative: E. A. Henry).
- CONNECTICUT STATE COLLEGE (Agricultural Economics Department), Storrs, Conn.
- CUNNINGHAM, L. C., Department of Agricultural Economics and Farm Management, Cornell University, Ithaca, N.Y.
- CURTISS, W. M., Department of Agricultural Economics and Farm Management, Cornell University, Ithaca, N.Y.
- DAUGHERTY, M. M., Agricultural Economist, Agricultural Experiment Station, University of Delaware, Newark, Del.
- DIXON, H. M., Agricultural Economics Extension, Extension Service, United States Department of Agriculture, Washington, D.C.
- GRIMES, Professor W. E., Kansas State Agricultural College, Manhattan, Kan.
- HALE, R. I., Margarita Black Union High School, Atascadero, Cal.

- HEDLUND, G. W., Department of Agricultural Economics and Farm Management, Cornell University, Ithaca, N.Y.
- HILL, Dr. E. B., Michigan State College, University of Michigan, East Lansing, Mich.
- HILL, Dr., F. F., Farm Credit Administration, Washington, D.C.
- HOBSON, L. G., Senior Agricultural Economist, Fourth District, Farm Credit Administration, Louisville, Ky.
- JESNESS, O. B., Chief of Division of Agricultural Economics, University of Minnesota, St. Paul, Minn.
- JOHNSON, E. C., Division of Agricultural Economics, University of Minnesota, St. Paul, Minn.
- KENESTRICK, H. G., Agricultural Education Department, Ohio State University, Columbus, Ohio.
- KRAUSS, F. G., Director of Extension, University of Hawaii, Honolulu, Hawaii.
- MENDUM, S. W., 214 Holly Avenue, Takoma Park, Washington, D.C.
- MERCHANT, Dr. C. H., Department of Agricultural Economics and Farm Management, College of Agriculture, University of Maine, Winslow Hall, Orono, Me.
- MORGAN, O. S., Professor of Agriculture (Economics), Schermerhorn Hall, School of Business, Columbia University, New York City, N.Y.
- MYERS, Dr. W. J., Governor, Farm Credit Administration, Washington, D.C.
- NEBRASKA, THE UNIVERSITY OF (Office of the Librarian), Lincoln, Nebr.
- NOBLE, C. V., University of Florida, Gainesville, Fla.
- NORTH-WESTERN UNIVERSITY, THE (The Library), 619 Clark Street, Evanston, Ill.
- POND, Professor G. A., Division of Agricultural Economics, University of Minnesota, St. Paul, Minn.
- POWELL, W., Department of Agricultural Economics and Farm Management, Cornell University, Ithaca, N.Y.
- RASMUSSEN, M. P., Department of Agricultural Economics and Farm Management, Cornell University, Ithaca, N.Y.
- ROSS, Dr. H. A., c/o The Borden Company, 350 Madison Avenue, New York City, N.Y.
- SANDERS, J. T., Oklahoma A. and M. College, Stillwater, Okla.
- SCOVILLE, G. P., Department of Agricultural Economics and Farm Management, Cornell University, Ithaca, N.Y.
- SPENCER, Professor L., Department of Agricultural Economics and Farm Management, Cornell University, Ithaca, N.Y.
- STINE, Dr. O. C., Division of Statistical and Historical Research, Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D.C.
- TAYLOR, Dr. H. C., Director, Farm Foundation, 606 South Michigan Avenue, Chicago, Ill.
- TENNANT, J. L., Associate Economist, Agricultural Experiment Station, Rhode Island State College, Kingston, R. I.
- ULREY, O., Department of Economics, Michigan State College of Agriculture and Applied Science, East Lansing, Mich.
- WARREN, Dr. S. W., Department of Agricultural Economics and Farm Management, Cornell University, Ithaca, N.Y.
- WASHINGTON, THE STATE COLLEGE OF (Library), Pullman, Wash. (Representative: W. W. Foote, Librarian.)
- WEAVER, Professor F. P., Department of Agricultural Economics, The Pennsylvania State College, Pa.
- WEHRWEIN, G. S., Department of Agricultural Economics, University of Wisconsin, Madison, Wis.
- WHELPTON, P. K., Scripps Foundation for Research in Population Problems, Miami University, Oxford, Ohio.
- WICKENS, D. L., Division of Agricultural Finance, Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D.C.

ASIA

CHINA

Correspondent:

- CHANG, C. C., University of Nanking, Nanking.
- BUCK, J. L., University of Nanking, Nanking.
- FENG, R., c/o C. C. Chang, University of Nanking, Nanking.
- Hsu, P. C., University of Nanking, Nanking.
- LIANG, C. C., National Research Institute of Social Sciences, Academia Sinica, Nanking.

List of Officers and Members

SWEN, W. Y., Department of Agricultural Economics, University of Nanking, Nanking.
 TSCHANG, W. H., 44 Tao Yuen Hsin Tsun, Chu Chow, Nanking.
 YAO, H. S., Mass Education Movement, Tinghsien, Hopphi.

INDIA

GULERI, Professor J., Punjab Agricultural College and Research Institute, Lyallpur, Punjab.

IMPERIAL COUNCIL OF AGRICULTURAL RESEARCH, Old Delhi. (Correspondence through: Office of the High Commissioner for India, General Department, India House, Aldwych, London, W.C.2, England).

JAPAN

Correspondent:

NASU, S., Department of Agriculture, Tokio Imperial University, Tokio.

KOBAYAKAWA, Professor K., Miyazaki College of Agriculture and Forestry, Miyazaki.
 KYOTO IMPERIAL UNIVERSITY (Institute of Agricultural Economics, Department of Agriculture), Kyoto. (Representative: Professor D. Hashimoto).

PALESTINE

Correspondent:

ELAZARI-VOLCANI, Professor I., Director, Agricultural Experiment Station, Institute of Agriculture and Natural History, Rehoboth.

BRUTZKUS, Professor B., Jerusalem-Bechavia B, Alfassi Road 33.

AUSTRALASIA

AUSTRALIA

INDUSTRY, THE BUREAU OF, QUEENSLAND, 4 Q.G. Building, Brisbane, Queensland.
 WELCH, A. W., Premier's Department, Sydney, N.S.W.

NEW ZEALAND

Correspondent:

RIDDET, Professor W., Director, Dairy Research Institute, Massey Agricultural College, Palmerston North.

EUROPE

BELGIUM

BOEREBOND BELGE, Louvain, 24, Rue des Recollets. (Representative: J. FORGET).

BULGARIA

Council:

MOLLOFF, Professor Y. S., College of Agriculture, University of Sofia, Sofia.

Correspondent:

ANDERSON, Professor O. N., Director, Statistical Institute for Economic Research, State University, Sofia IV, Shipka 6.

BULGARIAN ECONOMIC SOCIETY, Sofia, Zar Osvoboditel No. 6.

DELEFF, N. S., College of Agriculture, University of Sofia, Sofia.

DOLINSKY, Professor N. V., Handelshochschule, Varna.

MYSHAIKOV, Professor D., Sofia, 35 Neofit Rilsky.

STATISTICAL INSTITUTE FOR ECONOMIC RESEARCH, STATE UNIVERSITY, Sofia IV, Shipka 6.

TOTEFF, A. U., Sofia, St. Karadja 18a.

UNION DES BANQUES POPULAIRES, Sofia.

WHIPPLE, C. E., Near East Foundation, Institute of Agricultural Economics, Faculty of Agriculture, University of Sofia.

CZECHOSLOVAKIA

Correspondent

BRDLIK, Dr. V., Institute of Agricultural Accountancy and Economics of the Czechoslovak Republic. Praha XIX. Device 1540.

- BUČEK, Dr. F., Super Counsellor of the Institute of Agricultural Accountancy and Economics of the Czechoslovak Republic, Praha XIX, Dejvice, U. Nové Techniky 25.
 KNESPL, Ing. J., Counsellor of the Institute of Agricultural Accountancy and Economics of the Czechoslovak Republic, Praha XVIII, Strešovice 320.
 MEDINGER, Dr. W., Praha, Mála Shála u Turnova.
 PATKA, Ing. E., Super Counsellor of the Institute of Agricultural Accountancy and Economics of the Czechoslovak Republic, Praha-Dejvice, Sadova 16.
 CESKOSLOVENSKÁ AKADEMIE ZEMĚDELSKÁ (Czechoslovak Academy of Agriculture). Praha XII, Slezská Ul. c. 7. (Representative: Dr. E. REICH, General-sekretar).
 WINDIRSCH, Dr. F., Chief of the German Division of the Agricultural Council in Praha, Praha II, 799.
 WORLICZEK, Dr. C., Praha II, Lützowova 40.

DENMARK

Council:

LARSEN, Professor O. H., Det landøkonomiske Driftsbureau, Gl. Kongevej 127¹, København V.

Correspondent:

LARSEN, Professor O. H. (See above).

ASMUSSEN, J., 22 Kristiansgade, København K.

HOLM, A. H., Secretary-General, Landbrugsraadet, Axelborg, København V.

JACOBSEN, A. P., Agricultural Commissioner to the Danish Government, Berlin, N.W. 40 Alsenstrasse 4, Germany.

SKOVGAARD, Dr. K. K., Sekretær, De samvirkende sjællandske Landboforeninger, Vestre Boulevard 42, København V.

SØRENSEN, S., Agricultural Adviser to the Danish Government, 29 Pont Street, London, S.W. 1, England.

FRANCE

Joint Correspondents:

AUGÉ-LARIBÉ, Professor M., 138, Avenue de Wagram, Paris.

ROUILLY, A., Société agricole de comptabilité et de révision, 8, Rue d'Athènes, Paris 9e.

GIRARD, H., Domaine de Bertrandfosse, Pailly (Oise).

GERMANY

Council:

VON DIETZE, Professor Dr. C., Potsdam, Wörtherstrasse 14. (Universität, Berlin).

SEEDORF, Professor Dr. W., Göttingen, Gosslerstrasse 16. (Institut für landwirtschaftliche Betriebs- und Landarbeitslehre an der Georg August-Universität.)

ZÖRNER, Professor Dr. H., Berlin-Lichterfelde-Ost, Schillerstrasse 12a. (Direktor des Instituts für landwirtschaftliche Betriebslehre an der Friedrich-Wilhelms-Universität, Berlin.)

Correspondent:

PFLEIDERER, Dr. O., Berlin-Dahlem, Luciusstrasse 9.

AHLGRIMM, Dr. F., I.G. Farbenindustrie, Berlin, N.W. 7, Neustädtische Kirchstrasse 9. (Representative of Stickstoff-Syndikat G.m.b.H.)

AUHAGEN, Professor Dr. O., Berlin-Schlachtensee, Ernst-Ring-Strasse 10.

VON BISMARCK, Graf, Varzin, Krs. Schlawa, Pommern.

VON BISSING, Professor Dr. FREIHERR, Königsberg i/Pr., Vogelsweide 10.

BOLTS, G., Westerscheps, Post Edewecht, in Oldenburg.

BRINKMANN, Professor Dr. C., Heidelberg, Neuenheimer Landstrasse 8. (Institut für Sozial- und Staatswissenschaften, Universität, Heidelberg.)

COMMISCHAU, H., Diplomlandwirt, Berlin, N.W. 7, Neustädtische Kirchstrasse 3.

VON DER DECKEN, Dr. H., Berlin-Halensee, Carionweg 4.

DEGENFELD-SCHÖNBURG, Graf FERDINAND, University of Vienna, Baumannsgasse 3, Wien III, Austria.

DIEHL, Professor Dr. K., Geh. Regierungsrat, Freiburg i./Br., Mercyrstrasse 27.

DRESCHER, Dr. L., Bank für deutsche Industrie obligationen, Berlin, W. 8, Schinkelplatz 3-4.

VON FINCKENSTEIN, Graf Dr. H. W. FINCK, Vermala sur Sierre, Valais, Switzerland.

- FREYTAG, Dr. K., Freiburg i./Br. (Communications to Frau Gertrud Lorenz bei Fräulein Goldstein, Berlin-Wilmersdorf, Beckstedter Weg 15, I.)
- FROWEIN, A., Präsident, Wuppertal-Elberfeld, Am Buschhäuschen 11.
- HANAU, Dr. A., Berlin-Zehlendorf, Ithweg 8.
- HANNOVERSCHE LANDESKREDITANSTALT, Hannover, Am Schiffgraben 2. (Representative: Dr. DRECHSLER, General-direktor.)
- HEBERLE, Dr. R., Kiel, Niemannsweg 61.
- HILGENSTOCK, Dr., Hannoversche Landeskreditanstalt, Hannover, Am Schiffgraben 2
- INSTITUT FÜR AGRAR- UND SIEDLUNGSWESEN AN DER UNIVERSITÄT ROSTOCK, Rostock. (Representative: Professor Dr. WOLLENWEBER.)
- INSTITUT FÜR KONJUNKTURFORSCHUNG, Berlin, W.8, Unter den Linden 13. (Representative: Geheimrat Professor Dr. WAGEMANN.)
- INSTITUT FÜR TIERZUCHT UND MILCHWIRTSCHAFT DER UNIVERSITÄT Breslau, Breslau, Hansastrasse 25. (Representative: Professor Dr. ZORN.)
- INSTITUT FÜR WELTWIRTSCHAFT UND SEEVERKEHR, Kiel, Düsternbrook 120/122. (Representative: Professor Dr. A. PREDÖHL.)
- INSTITUTSABTEILUNG FÜR WIRTSCHAFTSLEHRE DES LANDBAUS AM LANDWIRTSCHAFTLICHEN INSTITUT DER HESSISCHEN LANDESUNIVERSITÄT, Giessen, An der Hardt 3. (Representative: Professor Dr. B. PFAFF.)
- INSTITUT FÜR WIRTSCHAFTSLEHRE DES LANDBAUS AN DER ALBERTUS-UNIVERSITÄT, Königsberg i./Pr., Tragheimer Kirchenstrasse 83, I. (Representative: Professor Dr. E. LANG.)
- INSTITUTS FÜR DIE WIRTSCHAFTSLEHRE DES LANDBAUS AN DER TECHNISCHEN HOCHSCHULE MÜNCHEN, München. (Representative: Professor Dr. HEUSER.)
- INSTITUT FÜR WIRTSCHAFTSWISSENSCHAFT AN DER JOHANN-WOLFGANG-GOETHE-UNIVERSITÄT. Frankfurt-M.-Süd 10, Rubensstrasse 28. (Representative: Dr. A. SKALWEIT, Direktor.)
- VON JANSON, G., Berlin, W.50, Regensburgerstrasse 14a.
- JENNY, Professor Dr. E., Stuttgart-S., Olgastrasse 115.
- JESEN, Professor Dr. J., Handelshochschule Berlin, Berlin, C.2, Spandauerstrasse.
- KISKER, Dr. IDA, Halle, Westfalen.
- KRAUSE, Dr. H., Berlin-Dahlem, Luciusstrasse 9.
- LANG, Professor Dr. E., Königsberg i./Pr., Mozartstrasse 12, II.
- LÜBKES, Dr. F., Deutsche Rentenbankkreditanstalt, Berlin, W.8, Wilhelmstrasse 67.
- LUDOWICI, Dr. ing. J. W., Siedlungsbeauftragter der N.S.D.A.P., München, Leopoldstrasse 17.
- VON DER MARWITZ, B., Friedersdorf, Post Seelow (Mark).
- MEHRENS, Dr. B., Berlin-Nikolassee, Dreilindenstrasse 24/26.
- MENDELSON, Dr. F., Kammerdirektor i.R., Berlin-Dahlem, Miquelstrasse 40.
- MÜLLER, Dr. A., Staatssekretär a.D., Berlin-Wilmersdorf, Prinzregentstrasse 24.
- MÜNZINGER, Professor Dr. A., Landwirtschaftliche Hochschule, Hohenheim b./Stuttgart.
- OLDENBERG, Geheimrat Professor Dr. K., Göttingen, Nikolausbergerweg 68.
- REICHSKURATORIUM FÜR TECHNIK IN DER LANDWIRTSCHAFT, Berlin, S.W.11, Bernburgerstrasse 14. (Representative: Dr. T. TROSCHE.)
- RICHARZ, Dr. H., Berlin-Charlottenburg, Kastanienallee 23.
- RITTER, Professor Dr. K., Berlin-Steglitz, Ganghoferstrasse 4.
- SAENGER, Dr. K., Präsident, Berlin-Dahlem, Falkenried 10. (Preussisches Statistisches Landesamt.)
- SALIN, Professor E., Basel, Switzerland.
- SCHILLER, Dr. O., Landwirtschaftlicher Sachverständiger bei der Deutschen Botschaft in Moskau, U.d.S.S.R.
- SCHINDLER, Dr. A., Grätzwalde, Post Fichtenau, Wittstockstrasse.
- VON SCHORLEMER-LIESER, Freiherr, Lieser/Mosel.
- SCHUMACHER, Geheimrat Professor Dr. H., Berlin-Steglitz, Schillerstrasse 8. (Universität, Berlin.)
- SEELMANN-EGGEBERT, Dr. E., Deutsche Rentenbankkreditanstalt, Berlin, W.8, Wilhelmstrasse 67.
- SERING, Geheimrat Professor Dr. M., Berlin-Dahlem, Luciusstrasse 9. (*Second Vice-President of the Conference.*)
- SOLMSEN, Dr. G., Berlin, W.8, Mauerstrasse 35. •
- STABSAMT DES REICHSBAUERNFÜHRERS, Berlin, W.35, Tiergartenstrasse 2. (Representative: Professor Dr. C. MEYER.)
- STEINBACH, —, Schriftleiter, *Der Wirtschaftsring*, Berlin, W.35, Margaretenstrasse 11.

- STOCKMANN, Dr. G., Tübingen, Zollernstrasse 23.
 STREMMER, Professor Dr. H., Danzig-Langfuhr, Jäschkentaler Weg 23 B. (Geologisches Institut der technischen Hochschule.)
 STRIEMER, Dr. A., Berlin-Neukölln, Isarstrasse 4.
 TANTZEN, T. J., Ministerpräsident a.D., Heering, Post Abbehausen.
 TSCHANG, Dr. P., Freiburg i./Br., Erwinstrasse 50.
 WALTER, Dr. F., Landwirtschaftsrat, Münster, Warendorferstrasse 16.
 WARMBOLD, Professor Dr. H., Reichsminister a.D., Berlin-Dahlem, Schumacherplatz 8.
 WILBRANDT, Dr. H., Konur sokak 23 A, Ankara-Jenisehir, Turkey.
 WILMANN, Professor Dr. W., Leipzig, O. 5., Johannisallee 23.
 VON WILMOWSKY, Freiherr T., Landrat a.D., Berlin, W. 8., Behrenstrasse 3.
 WIRTSCHAFTSPOLITISCHER DIENST (WPD), Berlin, S.W. 11, Saarlandstrasse 92/102. (Representative: D. E. VON DER DECKEN.)
 WOERMANN, Professor Dr. E., Direktor des Instituts für Landwirtschaftliche Betriebslehre, Halle/Saale, Luisenstrasse 12. (Landwirtschaftliches Institut.)
 ZAHN, Professor Dr. F., Präsident, München, Lerchenfeldstrasse 1.
 VON ZASTROW, B., Geheimer Regierungsrat, Reichsgrundbesitzerverband e.V., Berlin, W. 8, Leipzigerstrasse 119/120.

GREAT BRITAIN AND NORTHERN IRELAND

Council:

- ASHBY, Professor A. W., Department of Agricultural Economics, University College of Wales, Aberystwyth, Cardiganshire.
 BRIDGES, A., Deputy Director, Agricultural Economics Research Institute, University of Oxford, Parks Road, Oxford.
 MAXTON, J. P., 3 Magpie Lane, Oxford.

Correspondent:

- CURRIE, J. R., Research Department (Economics), Dartington Hall, Totnes, Devon. (*Honorary Secretary and Treasurer of the Conference.*)
 AGRICULTURE FOR SCOTLAND, DEPARTMENT OF, York Buildings, Queen Street, Edinburgh 2. (Representative: W. H. SENIOR, Advisory Officer on Farm Economics.)
 AVONCROFT COLLEGE, Stoke Prior, near Bromsgrove, Worcestershire. (Representative: J. DUDLEY, Warden.)
 BACON DEVELOPMENT BOARD, Thames House, Millbank, London, S.W. 1. (Representative: A. N. DUCKHAM, Research Officer.)
 BISSET, G. B., Assistant Economist, Agricultural Economics Department, University of Reading, 7 Redlands Road, Reading, Berkshire.
 DE BLANK, J., 73 Madeley Road, Ealing, London, W. 5.
 BLIGH, S. M., Cilmerly Park, Builth Wells, R.S.O., Breconshire.
 BROWN, A. H., Northwood Farm, Hayling Island, Hampshire.
 CAMPBELL, Dr. R. M., New Zealand Government Offices, 415 Strand, London, W.C. 2.
 CARSLAW, Dr. R. McG., Advisory Economist, School of Agriculture, University of Cambridge, Cambridge.
 COHEN, Miss R. L., Agricultural Economics Research Institute, University of Oxford, Parks Road, Oxford.
 COURTHOPE, Sir GEORGE L., Bart., M.P., Whiligh, Sussex.
 DALLAS, G., Strathclyde, Croyland Road, Wellingborough, Northamptonshire.
 DAVIES, J. Ll., Marketing Officer, Milk Marketing Board, Thames House, Millbank, London, S.W. 1.
 DAWE, Dr. C. V., Advisory Economist, Department of Agriculture and Horticulture, University of Bristol, Agricultural Advisory Office, 22 Berkeley Square, Bristol 8.
 DENNIS, F. S., Advisory Economist, Harper Adams Agricultural College, Newport, Shropshire.
 DICKINSON, F., Department of Agricultural Economics, University College of Wales, Aberystwyth, Cardiganshire.
 DINSDALE, D. H., Advisory Economist, Department of Agriculture, University of Durham, Armstrong College, Newcastle-upon-Tyne 2.
 DUNCAN, J. F., Redroofs, Dalnacoulter, Airdrie, Lanarkshire.
 DYKES, G. M., Overseas Representative, South African Co-operative Deciduous Fruit Exchange Ltd., 11 Garrick Street, London, W.C. 2.
 ELMHIRST, L. K., Dartington Hall, Totnes, Devon. (*President of the Conference.*)

- ENFIELD, R. R., Principal Economist, Economics Division, Ministry of Agriculture and Fisheries, 10 Whitehall Place, London, S.W.1.
- FRASER, K. MUNRO, Oriel College, Oxford.
- FRECHEVILLE, G., Windmill Hill Farm, Steeple Claydon, Buckinghamshire.
- GAVIN, W., C.B.E., Imperial Chemical House, London, S.W.1.
- GILCHRIST, J., Advisory Economist, The West of Scotland Agricultural College, 6 Blythswood Square, Glasgow, C.2.
- HACKING, T., Agricultural Organizer, Agricultural Education Department, Leicestershire County Council, 6a St. Martin's, Leicester.
- HALE, R. W., Secretary, The Agricultural Education Institute of Northern Ireland, Hillsborough, County Down, Northern Ireland.
- HARKNESS, D. A. E., Ministry of Agriculture, Government of Northern Ireland, Stormont, Belfast, Northern Ireland.
- HARRY, E. LL., Department of Agricultural Economics, University College of Wales, Aberystwyth, Cardiganshire.
- HAY, A., Sunnyside, Writtle, Chelmsford, Essex. (Agricultural Liaison Officer, The Rubber-Growers' Association.)
- HEATH, A. E., C.M.G., The Official Representative in London of the New South Wales Government, Wellington House, 125 Strand, London, W.C.2.
- HORACE PLUNKETT FOUNDATION, THE, 10 Doughty Street, London, W.C.1. (Representative: Miss M. DIGBY, Secretary.)
- HOWARD, Lady (LOUISE), 14 Liskeard Gardens, Blackheath, London, S.E.3.
- HOWELL, J. PRYSE, Department of Agricultural Economics, University College of Wales, Aberystwyth, Cardiganshire.
- HUGGINS, H. D., Agricultural Superintendent, Department of Agriculture, British Guiana.
- IMPER, Dr. A. D., Advisory Economist, The North of Scotland College of Agriculture, Crown Mansions, 41½ Union Street, Aberdeen.
- JOBSON, Miss B., Redroofs, Dalnacoulter, Airdrie, Lanarkshire.
- JONES, A., Economist, Economics Division, Ministry of Agriculture and Fisheries, 10 Whitehall Place, London, S.W.1.
- JONES, W. H., Department of Agricultural Economics, University College of Wales, Aberystwyth, Cardiganshire.
- LOYD, E. M. H., Secretary, Market Supply Committee, Queen Anne's Chambers, 41 Tothill Street, London, S.W.1.
- LONG, W. H., Advisory Economist, Department of Agriculture, The University, Leeds 2.
- MACGREGOR, J. J., 3 Magpie Lane, Oxford.
- MIDDLETON, Sir THOMAS H., K.C.I.E., K.B.E., C.B., Vice-Chairman, Development Commission, 6a Dean's Yard, Westminster, S.W.1.
- MURRAY, Dr. K. A. H., Agricultural Economics Research Institute, University of Oxford, Parks Road, Oxford.
- O'HARA, P. J., Ministry of Agriculture, Government of Northern Ireland, Stormont, Belfast, Northern Ireland.
- ORR, J., Adviser in Agricultural Economics, University of Manchester, 12 Lime Grove, Manchester.
- ORWIN, C. S., Director, Agricultural Economics Research Institute, University of Oxford, Parks Road, Oxford.
- RAY, S. C., Department of Agricultural Economics, University College of Wales, Aberystwyth, Cardiganshire.
- REES, T. G., Research Department (Economics), Dartington Hall, Totnes, Devon.
- ROBERTS, C. W., Midland Agricultural College, Sutton Bonington, Loughborough, Leicestershire.
- ROBERTSON SCOTT, J. W., *The Countryman* Office, Idbury, Kingham, Oxfordshire.
- RUSTON, Dr. A. G., 15 The Drive, Adel, Leeds 6.
- SCOTTISH AGRICULTURAL ORGANIZATION SOCIETY LTD., 28 Rutland Street, Edinburgh 1. (Representative: C. J. M. CADZOW, Secretary.)
- SHAXSON, E. S., Elsted Manor Farms, Midhurst, Sussex.
- SHEPARD, Professor C. Y., The Imperial College of Tropical Agriculture, St. Augustine, Trinidad, British West Indies.
- THOMAS, E., Advisory Economist, Agricultural Economics Department, University of Reading, 7 Redlands Road, Reading, Berkshire.
- VANE, W. M., c/o Lofts and Warner, 41 Berkeley Square, London, W.1.
- WELLS, Miss O. S., Peeples Hall, Newnham College, Cambridge.

List of Officers and Members

521

- WITNEY, D., Advisory Economist, Department of Economics, Edinburgh and East of Scotland College of Agriculture, 13 George Square, Edinburgh 8.
WYLLIE, J., Advisory Economist, South-Eastern Agricultural College, Wye, Ashford, Kent.

HUNGARY

Council:

- IHRIG, Professor C., Mezőgazdaságpolitikai Intezet, Budapest IV, Szerb-utca 23.
KENÉZ, Professor B., Budapest IV, Egyetem-tér 1-3.

Correspondent:

- VARGA, Dr. S., Director, Hungarian Institute for Economic Research, Budapest V, Alkotmány-utca 8.
BADICS, Dr. J., Budapest I, Tárnok-utca 2.
BORCSOK, A., Budapest X, Szaboky-utca 38.
FELLNER, Professor F., Budapest XI, Bere-utca 9.
HOYOS, Count MAX, Budapest IV, Kaplony-utca 5.
JUHOS, Professor L., High School of Agriculture, Debrecen.
DE KONKOLY-THEGE, Dr. J., Budapest II, Keleti Károly-utca 7.
KOOS, Dr. M., Budapest V, Szabadság-tér 10.
KOOS, Dr. Z., Budapest V, Balvány-utca 7.
LAKY, Professor D., Technical University, Budapest I, Műgyetemi-rakpart 3.
MALCOMÉS, Baron BÉLA, Pressechef im königl. ung. Ackerbauministerium, Budapest XIV, Szent Domonkos-utca 16.
MATYASOVSKY, Professor N., Budapest V, Klotild-utca 15.
DE NAVRATIL, Professor A., Budapest IV, Apponyi-tér 1.
NÖTEL, Dr. R., Budapest XI, Horthy Miklos-utca 14.
PRONAY, Baron GEORG, Budapest VIII, Trefort-utca 2.
REICHENBACH, Professor B., Budapest I, Naphegy-utca 59.
SURANYI-UNGER, Professor T., The University, Szeged.
SZABÓ, Professor G., Budapest XI, Bertalan-utca 1.
TAKACS, Dr. E., Budapest V, Kossuth Lajos-tér 11.
TELEKI, Count PAUL, Budapest V, Jozsef-tér 7.
THIRRING, Dr. L., Budapest II, Keleti Károly-utca 7.

IBERO-AMERICAN GROUP

- CHIAPA, Dr. L. N., 137 Hamilton Terrace, St. John's Wood, London, W.8, England.

INTERNATIONAL INSTITUTES

- VON BÜLOW, F. W., Chief of the Agricultural Service, International Labour Office, League of Nations, Geneva, Switzerland.
PAVLOVSKY, Dr. G., International Institute of Agriculture, Rome, Villa Umberto 1, Italy.

IRISH FREE STATE

Correspondent:

- O'DONOVAN, J., 10 Airfield Road, Rathgar, Dublin.

ITALY

Correspondent:

- LORENZONI, Professor G., Firenze, Via Scipione dei Ricci 24.
BRIZI, Professor A., R. Istituto superiore Agrario, Laboratorio di Economica rurale, Portici (Napoli).
ISTITUTO NAZIONALE DI ECONOMIA AGRARIA, Roma, Via Regina Elena 36.
SERPIERI, Professor A., Roma, Via XXVIII Settembre.
TASSINARI, Professor G., President, Confederazione nazionale fascista degli Agricoltori, Roma, Via Vittorio Veneto, Palazzo Margherita.

LATVIA

Correspondent:

- STARCS, Professor Dr. P., Director, Latvijas lauksaimniecības ekonomiskais institūts (Latvian Institute of Rural Economy), Riga, Baznīcas iela 4a.
KREISHMANIS, Professor P., Faculty of Agriculture, University of Latvia, Riga.

List of Officers and Members

NETHERLANDS

Council:

MINDERHOUD, Professor Dr. G., Landbouwhoogeschool, Wageningen.

SMIT, Ir. Chr. P. G. J., Den Haag, Wilhelmina van Pruisenstraat 53.

Correspondent:

SMIT, Ir. Chr. P. G. J. (See above).

AARTSDIOCESANE R. K. BOEREN- EN TUINDERSBOND, Arnhem, Nieuwe Kraan, 29.

ADDENS, N. G., Bellingwolde (Gron.).

BLINK, G. J., De Boerdery (Duinrell), Wassenaar.

VAN DEN BRIEL, A. P., De Meern, Utrecht.

CENTRAAL BUREAU VOOR DE STATISTIEK, Het, Den Haag.

DIJT, Dr. M. D., Eierland, Texel.

VAN HAAREN, P. J., Secretaris, Noordbrabantsche Christelijke Boerenbond, Tilburg.

VAN HAASTERT, H., Secretaris, Katholieke Boeren-en-Tuindersbond, Den Haag, Bezuidenhoutscheweg, 76.

KLEYBURG, P. L., Landbouwkundige b/d Arbeidsinspectie, Den Haag, Nieuwe Uitleg 12.

LOUWES, Ir. S. L., Wittenburgerweg 118, Wassenaar.

MANSHOLT, T. J., Ministry of Economy and Labour, Den Haag.

MOLHUYSEN, H., Secretaris, Kon. Ned. Landbouw Comite, Den Haag, Z.O., Buitensingel 234c.

ROOSCHENSCHOON, C. F., Bakkum, Heereweg 11.

RUYTTER, H., Secretary to the A.B.T.P., Arnhem, Nieuwe Kraan 29.

STEVENS, Ir. C. G. P., Den Haag, Floris Grypstraat 27.

WIND, Ir. J., 'de Eekhof', Hardenberg.

VAN WOERKOM, A., Den Haag, Reinkensstraat 41.

NORWAY

Council:

ORGEDAL, Professor Dr. P., Norges Landbrukskøiskolen i Ås.

Correspondent:

BORGEDAL, Professor Dr. P. (See above.)

LANDBRUKETS PRISCENTRAL, Ski st. (Representative: W. KLOSE, Sekretær.)

LANDBRUKSDIREKTØREN, LANDBRUKSDEPARTEMENTET, Oslo. (Representative: O. T. BJANES.)

NORGES BONDELAG, Bøndernes Hus, Oslo. (Representative: — STRAND, Sekretær.)

OMSETNINGSRAADET, Stortingsgt. 28, Oslo.

SELSKAP FOR NORGES VEL, DET KGL., Bøndernes Hus, Oslo. (Representative: O. HERSONG.)

STATISTISKE CENTRALBYRÅ, DET, Biblioteket, Oslo.

VINTERLANDBRUKSSKOLEN, Oslo. (Representative: — NORDLID, Direktor.)

POLAND

Correspondent:

SCHMIDT, Dr. S., Krakow, Smolensk Street 3.

KRAKOWSKA IZBA ROLNICZA (Cracow Chamber of Commerce), Krakow, pl. Szczepanski 8.

ZWIĄZEK IZB I ORGANIZACYJ ROLNICZYCH, RZECZYPOSPOLITEJ POLSKIEJ (The Union of Agricultural Chambers and Agricultural Organizations of Poland), Warszawa, Kopernika Nr. 30.

SWEDEN

Correspondent:

BJÖRKMAN, Professor T., Kungl. Lantbruksakademien, Mästersamuelsgatan 47, Stockholm. (Representing the Royal Swedish Academy of Agriculture.)

FLODKVIST, Professor Dr. H., Pro-Rektor, Lantbrukskøiskolen, Upsala.

FUNKQUIST, Professor Dr. H., Engelholm.

HøJER, Dr. E., Chief, Agricultural Statistical Bureau, State Statistical Office, Stockholm.

SVANTESSON, Dr. N., Kristianstad.

SWITZERLAND

Council:

LAUR, Professor Dr. E., Directeur de l'Union Suisse des Paysans, Brougg (Argovie).

Correspondent:

LAUR, Professor Dr. E. (See above.)

BOREL, Dr., Sous-directeur de l'Union Suisse des Paysans, Brougg (Argovie).
FEISST, Dr. E., Vice-Director, Agricultural Division, Federal Department of Public
Economics, Berne.
HOWALD, Dr. Sous-directeur de l'Union Suisse des Paysans, Brougg (Argovie).
KÖNIG, Professor R., Professeur d'économie nationale à l'université de Berne.
PAULI, Professor, Berne.

TURKEY

Correspondent:

HUSSEIN, SHUKRI, Department of Agriculture, Robert College, Stambul.

UNION OF SOVIET SOCIALIST REPUBLICS

Correspondent:

GORDEEV, Professor G. S., Agricultural Academy of Temeriaseff, 6 Khimichka, Kv. 1,
Moscow 8.

YUGOSLAVIA

Correspondent:

FRANGES, Dr. O., Zagreb, Kipni trg. 8.

INDEX

- Agricultural Service of the International Labour Office, the, 374-80
- Agriculture
 its relations to industry and the community, 24-72
 its economic and social development in relation to land tenure, 73-126
 the provision of credit for, 127-75
 the outlook for international trade in the products of, 176-203
 the technical, industrial, and economic development of farm organization and, 204-96
 situation in Belgium, 322-7
 prices, compulsory syndicates for regulating, 328-41
 problems of consumption of the products of, 412-83
- Arias, R. Garcia, on international trade in agricultural products, 189-90
- Arlandis, I. de
 on international trade in agricultural products, 187
 on farm organization, 294-5
 on part-time holdings for urban workers, 400-1, 407-8
- Arnold, C. R., on agricultural credit in the U.S.A., 173-5
- Ashby, A. W., 6-7
 'The Relations of Land Tenure to the Economic and Social Development of Agriculture', 87-103
 on farm organization and agricultural development, 239-43
- Balkans, land tenure in the, 84-5
- Bans, Raghbir Singh, on international trade in agricultural products, 192-7
- Baptist, G.
 'The Agricultural Situation in Belgium', 322-7
 on part-time holdings for urban workers, 406
- Bennett, M. K., 'Trends in World Wheat Consumption', 465-71
- Boss, Andrew, 'The Evolution of the American Farm Family', 484-91, 496-8
- Bridges, A., 'Farm Organization, with special reference to the Needs of Technical, Industrial, and Economic Development of Agriculture', 204-15
- British Columbia, the Natural Products Marketing Act in, 342-55
- Bronson, W. H., 'Problems of Milk Marketing Regulation', 297-307, 320-1
- Buček, F., 'The Organization of Farming in Czechoslovakia', 270-9
- Bülow, F. von
 on farm organization and agricultural development, 252-3
 'The Work of the Agricultural Service of the International Labour Office', 374-80
 on part-time holdings for urban workers, 398-400
 on problems of consumption, 436-8
- Burritt, M. C., 'Government Regulation of Public Utilities in the United States', 356-66
- Cairns, A., 'Commercial Policy and the Outlook for International Trade in Agricultural Products', 176-83, 197-203
- Canada
 land tenure in, 103-11
 corporation farming in, 259-70
- Cathcart, E. P., 'Problems of Consumption of Agricultural Products', 412-21
- China
 the economic situation of, 38-9
 changes in the currency of, and their effect on prices, 499-506
- Clement, F. M., 'How the Natural Products Marketing Act Operates in British Columbia', 342-55
- Cohen, Ruth, on milk marketing problems in England, 316-18
- Coke, J., on corporation farming in Canada, 259-70
- Commercial policy and the outlook for international trade in agricultural products, 176-203

- Consumption, problems of, 367-73,
412-83
- Corporation farming in Canada, 259-70
- Credit, the provision of agricultural,
127-75
- Czechoslovakia
agriculture and industry in, 58-65
agricultural credit in, 159-63
the organization of farming in,
270-9
- Dallas, George, on land tenure in
England, 122-4
- Davies, J. Ll., on English milk market-
ing problems, 307-13, 318-20
- Deering, A. L., 'Some Problems of
the Production Credit System',
164-72
- Denmark, farm organization and agri-
cultural development in, 245-8,
295-6
- Diet in the United States, 441-64
- Dietze, C. von
on industry and agriculture, 71-2
'Compulsory Syndicates for Regulat-
ing Agricultural Prices', 328-41
- Drescher, L., 'Problems of Land Ten-
ure in France', 111-14
- Duncan, J. F.
on industry and agriculture, 65-8
on farm organization and agricul-
tural development, 285-8
on the American family farm, 493-5
- Elmhirst, L. K., 1-4
'Opening Address', 18-23
on part-time holdings for urban
workers, 403
- Enfield, R. R., on industry and agri-
culture, 32-8
- England
land tenure in, 73-4, 88-103, 122-4
farm organization in, 291-2
milk marketing problems in, 307-
13, 316-20
- Farm credit, 127-75
- Farm income and meat production in
the United States, 367-73
- Farm organization with special refer-
ence to the technical, industrial,
and economic development of
agriculture, 204-96
- Farm, the American family, 484-98
- Finkensteinst, Graf Finck von, on prob-
lems of consumption, 464-5
- Forrester, R. B., 'Problems of Con-
sumption of Agricultural Pro-
ducts', 422-9
- France, land tenure in, 111-14
- Geldenhuis, F. E., on international
trade in agricultural products,
190
- Germany
land tenure and agriculture in, 74-
84
agricultural credit in, 172-3
farm organization and agricultural
development in, 253-8
part-time holdings for urban
workers in, 381-90
problems of consumption in, 464-5
- Harkness, D. A. E., 11
on industry and agriculture, 39-43
- Hay, Alexander, on farm organization
north of London, 291-2
- Henderson, R., on part-time holdings
for urban workers, 401-3
- Hibbard, B. H., 'The Trend of Tenancy
in U.S.A.', 114-19
- Hill, F. F., 'Farm Credit in the United
States', 127-43
- Holdings, part-time, for urban
workers, 381-411
- Hood, K., 'Part-Time Holdings for
Urban Workers', 391-8, 408-11
- Ihrig, C.
on the influence of economic
conditions on land tenure, 119-
22
on the American family farm,
495-6
- Industry, the relation of agriculture
to, 24-72
- International Labour Office, the, its
Agricultural Service, 374-80
- Knespl, Josef, on industry and agri-
culture, 58-65
- Krause, H., 'Part-Time Holdings for
Urban Workers', 381-90
- Ladd, C. E., 13-15
'What should a Government do
for Agriculture?', 44-8
- Laird, P. R., 9-10
- Land tenure in relation to the econo-
mic and social development of
agriculture, 73-126

- Lang, E., on farm organization and agricultural development in Germany, 253-8
- Larsen, O. H., 16
on farm organization and agricultural development in Denmark, 245-8, 295-6
- Lattimer, J. E., 16-17
'Land Tenure in Canada', 103-11
on international trade in agricultural products, 190-2
- Lewis, A. B.
on the Chinese economic situation, 38-9
on farm organization and agricultural development in the U.S.A., 279-81
'Changes in Chinese Currency and their Effect upon Commodity Prices', 499-506
- Lloyd, E. M. H.
on international trade in agricultural products, 187-9
on problems of consumption, 434-6
- McBride, C. G., on milk marketing problems in the U.S.A., 314-16
- MacDougall, F. L., on problems of consumption, 429-34
- Malcomés, Baron Bela, on industry and agriculture, 48-57
- Maxton, J. P.
on farm organization and agricultural development, 292-4
on the American family farm, 491-3
- Meat production and consumption in the United States, changes in, 367-73
- Milk marketing regulation, problems of, 297-321
- Millar, Very Rev. Dr. Harry, 8-9
- Natural Products Marketing Act in British Columbia, 342-55
- Patka, Eduard, 'The Experience of Debt Adjustment in Czechoslovakia', 159-63
- Pettit, G. H. N., on part-time holdings for urban workers, 403-4
- Poland, consumption problems in, 471-83
- Prices, agricultural compulsory syndicates for regulation, 328-41
- Prices, the effect of changes in Chinese currency on, 499-506
- Production credit system, the, 164-75
- Public utilities in the United States, government regulation of, 356-66
- Richards, Preston, 'Relation of Changes in Meat Production and Consumption to Changes in Farm Income from Live Stock in the United States', 367-73
- Schmidt, S.
on farm organization, 292
'Consumption Problems and Purchasing Power (Social Income) in Poland', 471-83
- Schultz, T. W.
on industry and agriculture, 68-70
on farm organization and agricultural development in the United States, 248-51
- Scott, W. R., 'The Relations of Agriculture to Industry and the Community', 24-32, 43-4
- Seedorf, W.
on agricultural credit, 172-3
on farm organization and agricultural development, 288-90
on part-time holdings for urban workers, 404-5
- Senior, W. H., 13
- Sering, M., 5-6
'The Relations of Land Tenure to the Economic and Social Development of Agriculture', 73-86
report on research into land tenure, 125-6
- Stiebeling, Hazel K.
on problems of consumption, 438-41
'Diets of Urban and Village Families in the United States', 441-64
- Sugar, the international trade in, 192-7
- Taylor, H. C.
on international trade in agricultural products, 183-5
on farm organization and agricultural development, 290-1
- Thomas, Edgar, 11-13
- Thomson, Edward H., 'A Sound Basis for Farm Mortgage Credit', 144-58
- Tobacco cultivation in Canada, 259-68

- Tolley, H. R., 'Farm Organization, with special reference to the needs of Technical, Industrial, and Economic Development of Agriculture, 227-39
- United States, the
 land tenure in, 114-19
 farm credit in, 127-58, 164-72, 173-5
 farm organization and agricultural development in, 227-39, 243-5, 248-51, 279-81, 294
 milk marketing problems in, 297-307, 314-16, 320-1
 government regulation of public utilities in, 356-66
 relation of changes in meat production and consumption to changes in farm income from live stock in, 367-73
 part-time holdings for urban workers in, 391-8
 problems of consumption in, 438-64
 the farm family in, 484-98
- Urban workers, part-time holdings for, 381-411
- Utilities, public, in the United States, government regulation of, 356-66
- Warren, G. F., 4-5
 on farm organization and agricultural development in the United States, 243-5, 294
- Wheat
 the outlook for trade in, 29-30, 176-92, 197-203
 the consumption of, 465-71
- Wheeler, L. A., on international trade in agricultural products, 185-6
- Wibberley, G. P., on part-time holdings for urban workers, 407
- Windirsch, F., 159 *n.*
- Yugoslavia, land tenure in, 84-5
- Zastrow, B. von, on part-time holdings for urban workers, 405-6
- Zörner, H., 15-16
 'Farm Organization, with special reference to the Needs of Technical, Industrial, and Economic Development of Agriculture', 216-26, 281-5

**PRESIDENT'S
SECRETARIAT
LIBRARY**